STUDENTS GUIDE

for

EA-6B I-CAP COMMUNICATIONS, NAVIGATION AND APS-130 RADAR ORGANIZATIONAL MAINTENANCE COURSE

SECTION I (INFORMATION SHEETS)
SECTION IV (DIAGRAMS)

C-102-3986



CNTT N4420D

NAVAL AIR MAINTENANCE TRAINING GROUP

For Training Purposes Only



NAVAL AIR MAINTENANCE TRAINING GROUP

STUDENT GUIDE

FOR

EA-6B I-CAP COMMUNICATIONS, NAVIGATION AND APS-130 RADAR ORGANIZATIONAL MAINTENANCE COURSE

C-102-3986

SECTION I (INFORMATION SHEETS)

DATE: Se

(FOR TRAININ

TABLE OF CONTENTS

Table	of	Con	tents	٠	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	i
Direct	. V:	iew	Storag	ge	Tu	ıbe	<u> </u>	(D)	VS:	Г)	Oj	pe:	rat	io	n		•					•				4.4.1-IS-1

EA-6B (ICAP) INTEGRATED NAVIGATION SYSTEM MAINTENANCE ANALYST

INFORMATION SHEET 4.4.1-IS-1

DATE: September 1982

TITLE: DIRECT VIEW STORAGE TUBE (DVST) OPERATION

- 1. Components
 - a. DVST has five components
 - (1) Writing gun
 - (2) Deflection system
 - (3) Flooding gun
 - (4) Collimating system
 - (5) Storage display system
 - b. Writing gun is comparable to the electron gun in a conventional CRT
 - (1) Target is a storage display system instead of a viewing screen
 - (2) Storage display system is charged by the video information contained in the write gun beam
 - c. Deflection system is a conventional magnetic deflection system
 - d. Flooding gun provides a continuous low energy beam
 - Collimating system ensures beam approaches the storage display system perpendicularly and with uniform density
 - (2) Flood beam allowed to pass the storage display system on to the viewing screen and is proportional to the change on each storage element. The display pattern becomes a visual reproduction of the stored electric charge pattern

(2) Electrode makes all elect: the storage surface at 90

Storage display system consist

- (1) Storage surface: special information written by th
- (2) Collector electrode:
 - (1) Fine metallic mesh in flooding beam
 - (2) Provides a return pasecondary electrons
- (3) Backing electrode: mesh which the storage surface
- (4) Aluminized viewing scree to give a bluish-green d

- d. Charge pattern on the storage surface controls the flood beam electrons that pass into the viewing screen field.
 - The display pattern is a visual reproduction of the stored electric charge pattern.
 - (2) Control of the persistence is effected by the duration and frequency of the erase pulses to the backing electrode
- 3. Development of Operating Voltage
 - a. Viewing screen voltage
 - (1) Generated by the High Voltage Power Supply (HVPS)
 - (2) +10K VDC output is connected to the DVST viewing screen
 - b. Write gun is referenced to -2K VDC
 - (1) Voltage is developed in the HVPS and routed to the High Voltage Coupler Assembly
 - c. Write gun control grid
 - (1) A 5 KHz sine wave is generated by an oscillator in Sweep Loss Protect A2
 - (a) Amplitude of the sine wave is controlled by the PHD BRT Control on the DISPLAYS Control Panel
 - (b) Amplified sine wave is routed to a 5 KHz bias transformer rectifier in the High Voltage Coupler Assembly
 - (2) 5 KHz bias transformer rectifier
 - (a) Transformer is a step-up device clamped to -2K VDC
 - (b) Rectifier is a voltage from -2K VDC to -1.8K of the 5 KHz input
 - (3) Video from the Video Ampliadded to output from the a grid Gl

- d. Write gun cathode
 - (1) -2K VDC is reduced to approximately -1.8K VDC in the High Voltage Coupler Assembly and provided to the cathode/filament line as a baseline DVST cut-off
 - (2) Composite intensity gate from the Intensity Gate Amplifier A3 is:
 - (a) Routed to the High Voltage Coupler Assembly
 - (b) Clamped to the baseline level
 - (3) Clamped intensity gate is routed to the DVST cathode
 - (a) Negative pulses applied to the cathode decrease the negative grid-to-cathode voltage
 - (b) Decreased negative grid-to-cathode voltage permits electron flow and unblanks the DVST

NOTE: A DVST cut-off condition exists if either the PHD BRT control is at minimum or there is no intensity gate

- e. Wtite gun filaments
 - (1) 115V, 400 Hz, phase A is provided to a filament transformer in the High Voltage Coupler
 - (2) 6.3 VAC secondary voltage is
 - (a) Clamped to the cathode potential to prevent arcing
 - (b) Routed to the DVST filaments
- f. Write gun focus grid
 - (1) -2K VDC within the High Voltage Coupler Assembly is routed to a zener diode/resistor voltage divider
 - (2) DC level values between approximately -1.4 and 1.7K VDC are:
 - (a) Available with a focus potentiometer in the divider network
 - (b) Routed to the DVST focus grid

- g. Flood gun filaments are provided with 6.3 VDC from the 6.3 VDC Power Supply Al2
- h. Flood gun cathode is wired to ground potential in Sweep Loss Protect Assembly A2
- i. Flood gun control grid is provided with an adjustable -30 VDC to 0 VDC from the Sweep Loss Protector Assembly A2
- j. Flood gun collimating grid is provided with filtered 120 VDC from the Sweep Loss Protector A2



NAVAL AIR MAINTENANCE TRAINING GROUP

STUDENT GUIDE

FOR

EA-6B I-CAP COMMUNICATIONS, NAVIGATION AND APS-130 RADAR ORGANIZATIONAL MAINTENANCE COURSE

C-102-3986

SECTION IV (DIAGRAMS)

DATE: September 1982

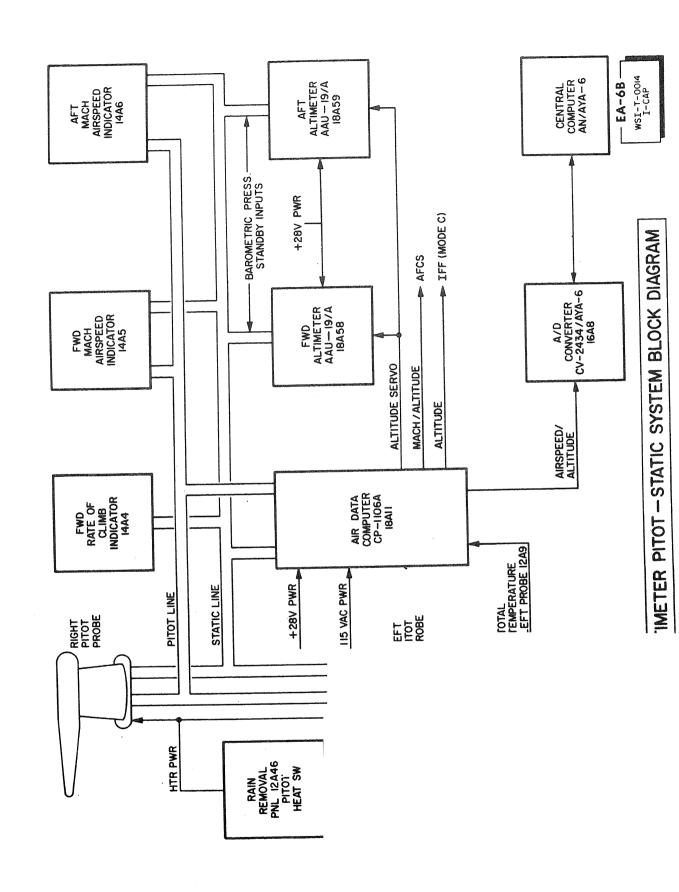
(FOR TRAINING PURPOSES ONLY)

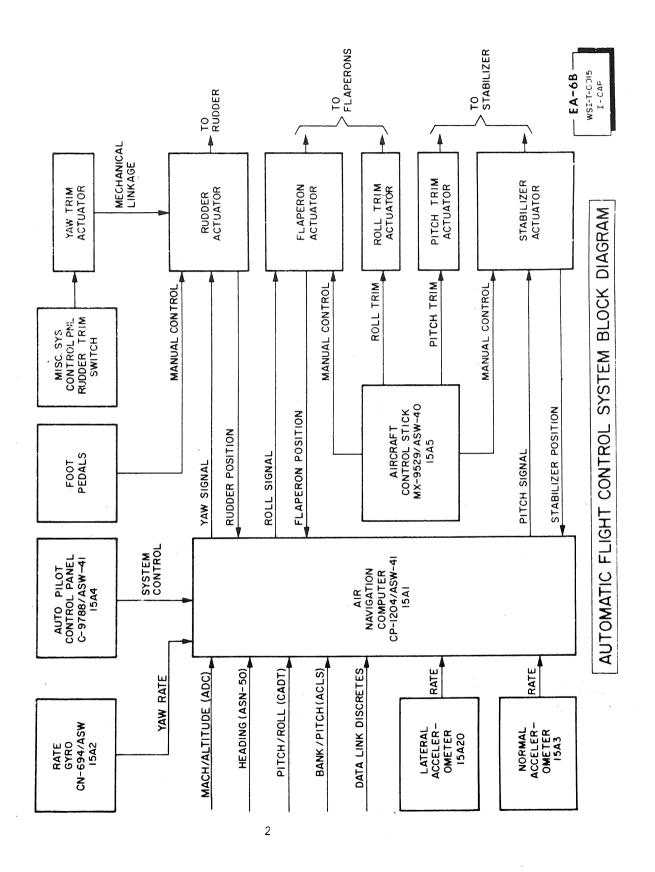
TABLE OF CONTENTS

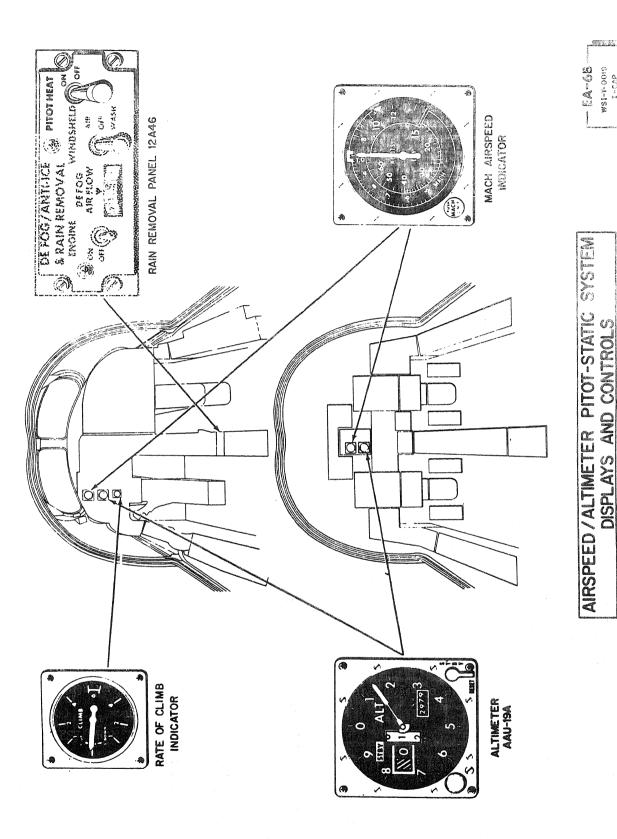
WSI-T-0014, Airspeed/Altimeter Pitot - Static System Block Diagram WSI-T-0015, Automatic Flight Control System Block Diagram
WSI-T-0015, Automatic Flight Control System Block Diagram
WSI-T-0019, Airspeed/Altimeter Pitot-Static System Displays and Controls
and Controls ————————————————————————————————————
WSI-T-0020, Automatic Flight Control System Display and Controls WSI-T-0021, Tactical Jammins System (TJS) I-CAP Simplified Block Diagram
WSI-T-0021, Tactical Jammins System (TJS) I-CAP Simplified Block Diagram
WSI-T-0022, Tail Fin POD Surveillance Antennas WSI-T-0023, Tracker Jammer POD
WSI-T-0022, Tail Fin POD Surveillance Antennas 7 WSI-T-0023, Tracker Jammer POD
WSI-T-0023, Tracker Jammer POD
WSI-T-0024. Receiver Control and Monitor Panels
2207 W 0005 Widoo Dieplay (P-933/ALD-99 (V)
Trot m 0026 Digital Dignlay Indicator [P-1220/A
rich m 0027 Digital Dignlay Indicator Control C-30///A
M 0000 7 POD Control (-X3(XK/ALD-YY(V)
0000 3/
The state of the s
THE TOTAL DISTANCE OF THE PROPERTY OF THE PROP
THE TOTAL PROPERTY OF THE PROP
AAAC ANY/ATA TOE /TCADA CIMPLITION KINCK DIAYLAM
and a sound broad Control Danol
ADC 105 (III) and ADC-175 (VHF) CONTROL LOCALIONS
- and and and are of the second secon
WAR A AAAA TITE Cyctem Interface
AAAA ARA TEO MUR I E II PANIO SEL MISULAYS AND COLUMN
NAV-C-0004, ADF System Interface
WSI-T-0010, TACAN ARN-84 and TFF APX-72 Displays and Controls 3
NAV-T10005, TACAN Simplified Block Diagram
NAV-T-0006, TACAN Coarse Bearing Transmission - Reception
NAV-T-0007, TACAN Fine Bearing Transmission - Reception
NAV-T-0008, TACAN Composite Bearing Transmission Acceptance NAV-T-0009, AN/ARN-84(V) Converter/Receiver
NAV-T-0009, AN/ARN-84(V) Converter/Receiver NAV-T-0010, AN/ARN-84(V) TACAN Control Panel NAV-T-0011, AN/ARN-84(V) TACAN Control Panel
NAV-T-0010, AN/ARN-84(V) TACAN Control Faller NAV-T-0011, Horizontal Situation Indicator Block Diagram
NAV-T-0011, Horizontal Situation Indicator Block 2108-1-
WAY-T-0012 Normal like interrogation and kepty
NAV-T-0012, Normal IFF Interrogation and keply rules and NAV-T-0013, Special IFF Reply Codes
NAV-T-0013, Special IFF Reply Codes
NAV-C-0005, TACAN Interface Diagram
WSI-T-0005, IFF APX-72 Simplified Block Diagram NAV-C-0006, IFF Interface Diagram
NAV-C-0006, IFF Interface Diagram
WSI-T-0007, AN/AIC-14A Intercommunication Set Control of Set WSI-T-0001, AN/AIC-14A Intercommunication Set Block Diagram

TABLE OF CONTENTS

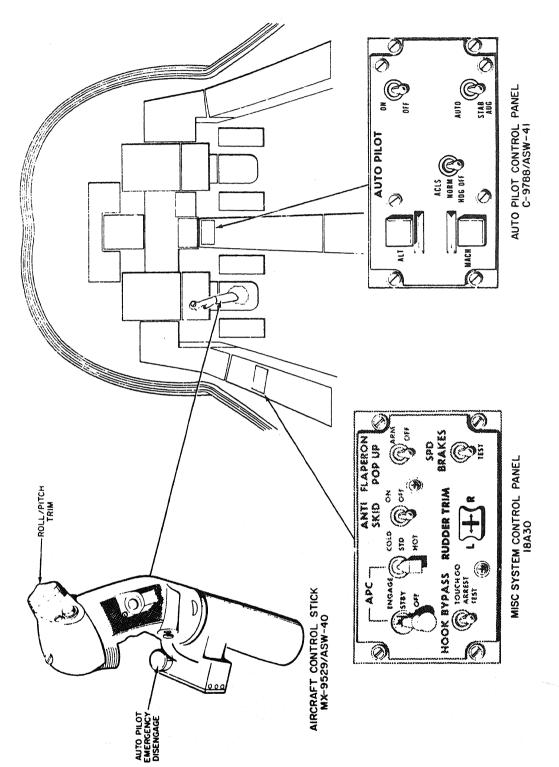
		PAGE
	AN/ARC-105 (HF) Radio Set Block Diagram Controls	- 50
WSI-T-0003,	AN/ARC-105 (Hr) Radio Set Block Diagram	- 51
WSI-T-0018,	Radar Altimeter and Doppler Radar Block Diagram	- 52
WSI-T-0013,	Radar Altimeter and Doppler Radar Diock Diagram Attitude-Heading Reference System Displays and Controls	- 53
WSI-T-0017,		
WSI-T-0040,	AN/ARA-63 Approach Control System Block Diagram	- 55
WSI-T-0041,		- 56
WSI-T-0042,	A THE TALL ASSESS OF POSTON COMPONERTOR NICK MIRELAND	
WSI-T-0043,	A ACD D-LA Yimir CwatAM CONTROLS RIO III SULGYD	_
WSI-T-0044,	The Annual Control Statem Lanter and Displayer	
WSI-T-0045,	/ 4 r /D Dodom Doogon Stretom CONTTOL SING DISULT	-
WSI-T-0046,	Lar / Gir Zi Ammanah Darram Compensator Control and Dispinal	-
WSI-T-0047,	- /- /- AND A-1	
WSI-C-0006,	Simplified ACLS Block Diagram	- 63
NAV-T-0022,	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
NAV-T-0017,	3" Attitude Director Indicator ID-1791A	- 65
NAV-T-0018,		
WSI-T-0012,		
NAV-C-0007,		
WSI-T-0048,		
NAV-T-0037	, Direct View Radar Indicator (DVRI), Pilot's Horizontal Display (PHD)	- 70
NAV-T-0038	, Pilot's Horizontal Display (PHD), APS-130 Radar Control Panel	- 71
NAV-T-0039		
NAV-1-0027		
Nr 1-0028		74 75
NAV-T-0029		
	PHD Block Diagram PRF Generator	77
NAV-T-0034		
NAV-T-0035	, Mixed Range Markers Generator, RSG Relative Bearing Servo	79
NAV-T-0030	, RSG Relative Bearing Servo, Roll Electronics Amplifier	80
NAV-T-0031	, Roll Electronics Amplifier, Pitch Electronics Amplifier	81
NAV-T-0032	Pitch Electronics Amplifier	82
WSI-C-0001	R1.EA-6B (1-CAP) Equipment Location (company)	83
WSI-C-0003	RI EA-6B (I-CAP) PIIOC'S GOCKPI	84
WSI-C-0004	R1 EA-6B (I-CAP) Pilot's Cockpit R3 EA-6B (I-CAP) FWD Cockpit (ECMO 1) EA-6B (I-CAP) Equipment Location (ECM)	85
WSI-C-0002	EA-6B (I-CAP) Equipment Location (Educ)	





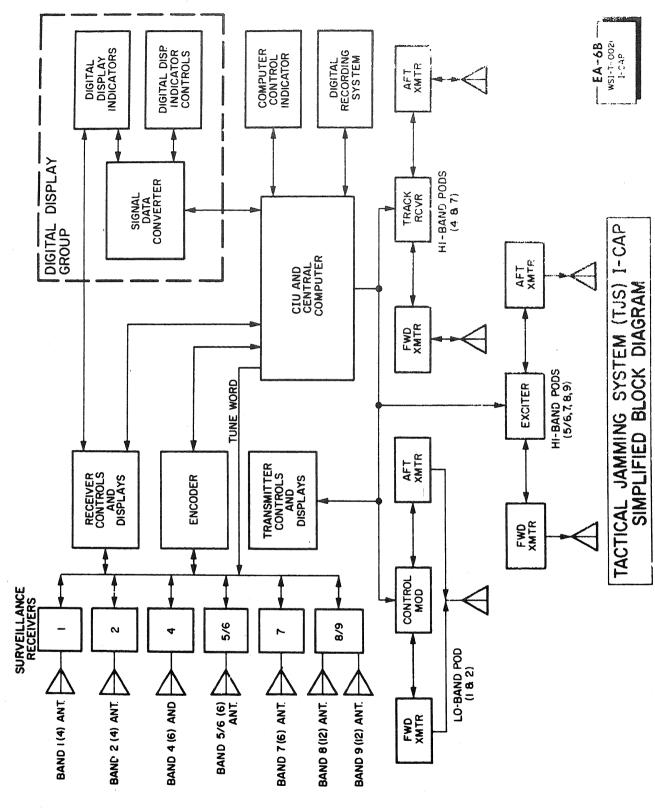


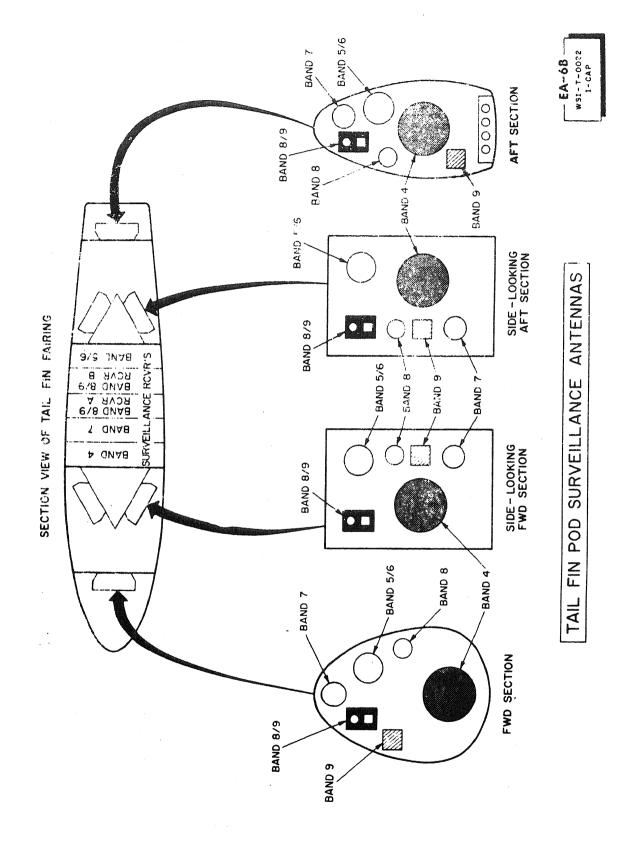
WSI-Y-0019 I-Cap

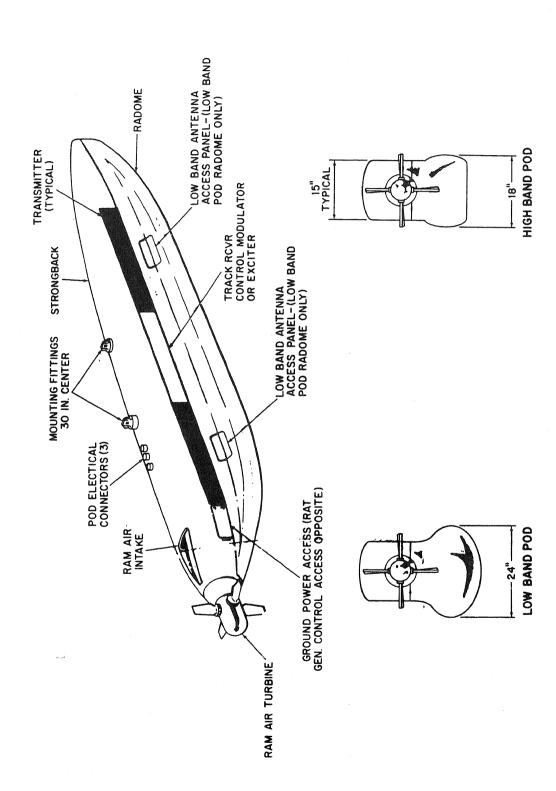


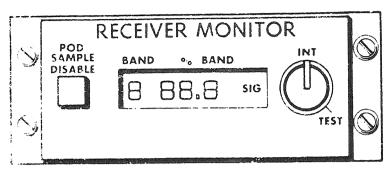
EA-68WSI-T-0020
I-CAP

AUTOMATIC FLIGHT CONTROL SYSTEM DISPLAY AND CONTROLS

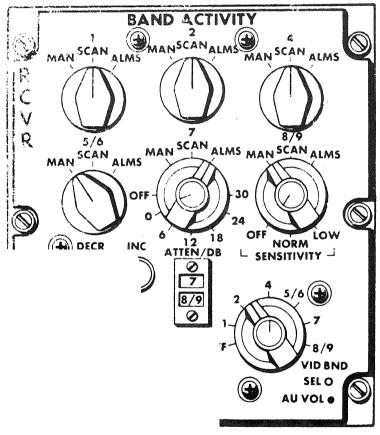








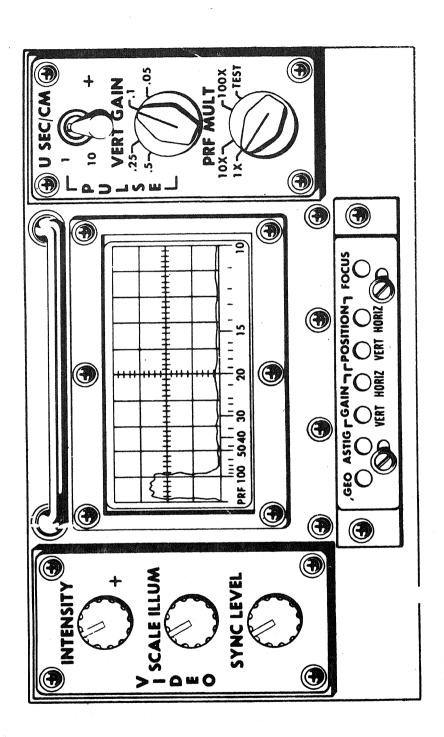
CONTROL, INDICATOR ID-2057/ALQ-99D



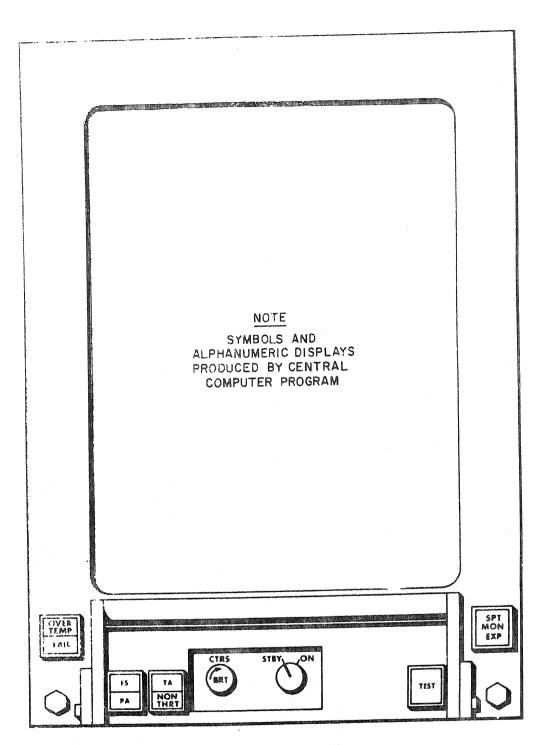
3-7839A/ALQ-99

MONITOR PANELS

WSI-T-0024

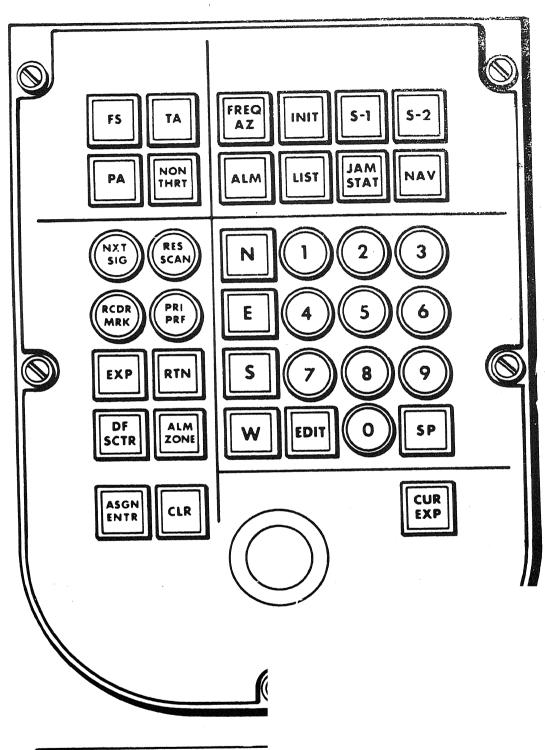


9

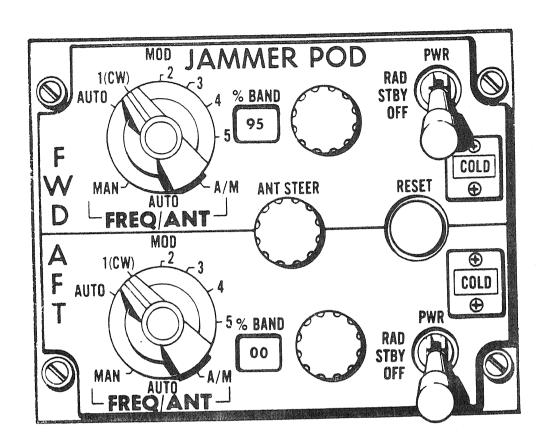


DIGITAL DISPLAY INDICATOR IP-1226/A

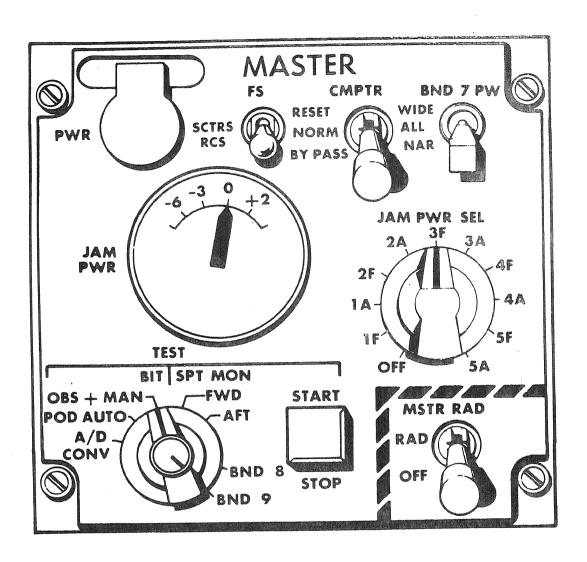
- EA-6B -



DIGITAL DISPLAY INDICAT

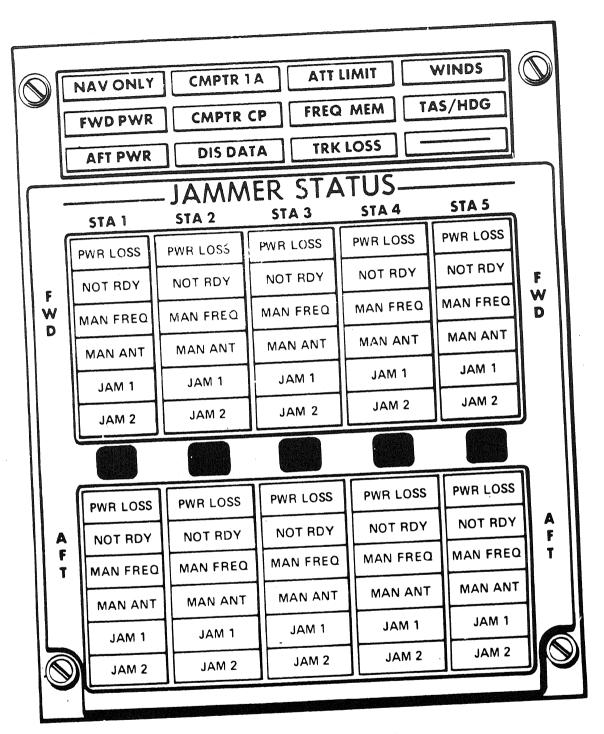


JAMMER POD CONTROL C-8318B/ALQ-99(V)



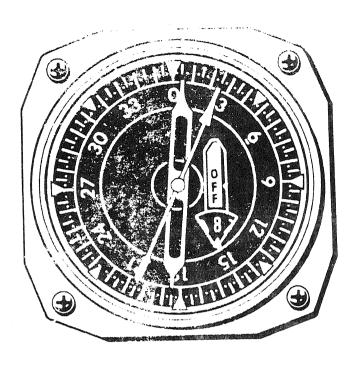
MASTER CONTROL PANEL C-9978/ALQ-99D

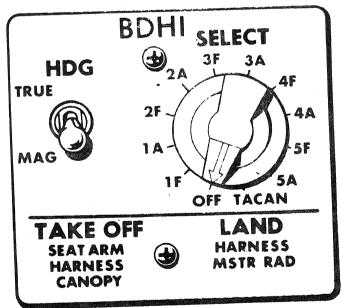
WSI-T-0029



JAMMER STATUS PANEL

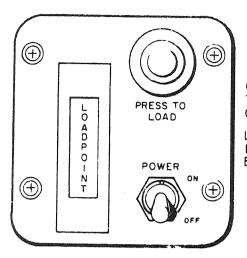
WSI-T-0030





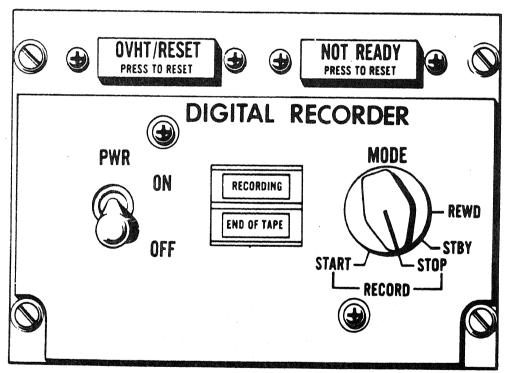
BDHI AND BDHI CONTROL PANEL

- EA-6B --WSI-T-003I I-CAP



CONTROL INDICATOR TAPE RELOADING C-9495/ASH-30

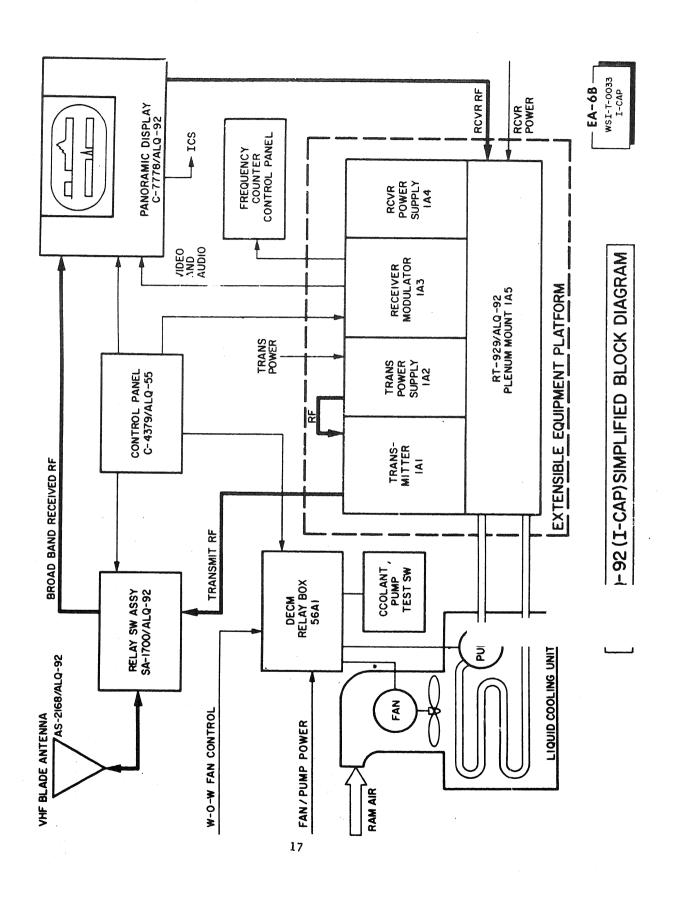
LOCATED BY RECORDER IN RIGHT FORWARD EQUIPMENT BAY

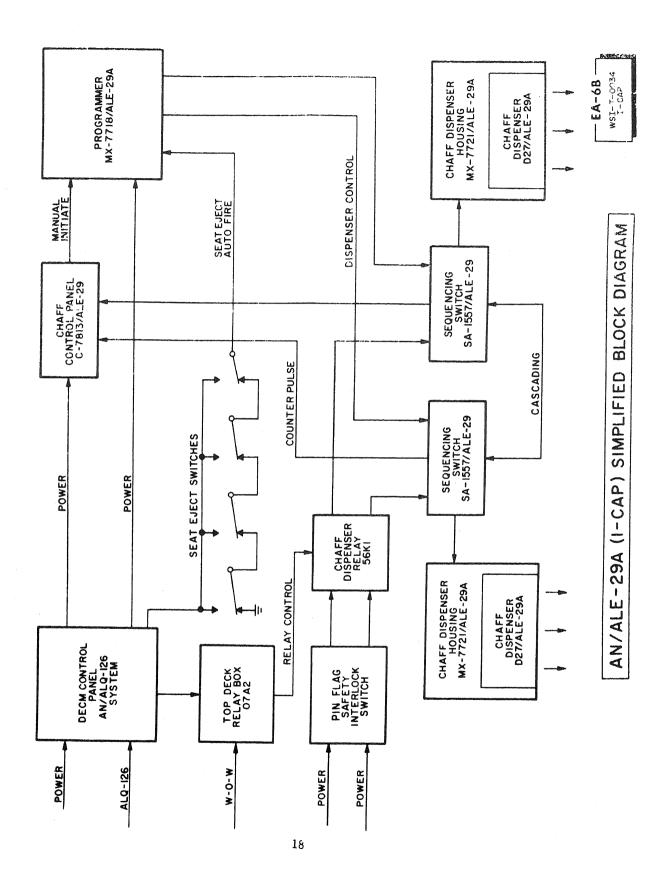


DIGITAL RECORDER CONTROL C-9494/ASH-30

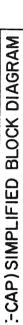
DIGITAL RECORDER CONTROLS

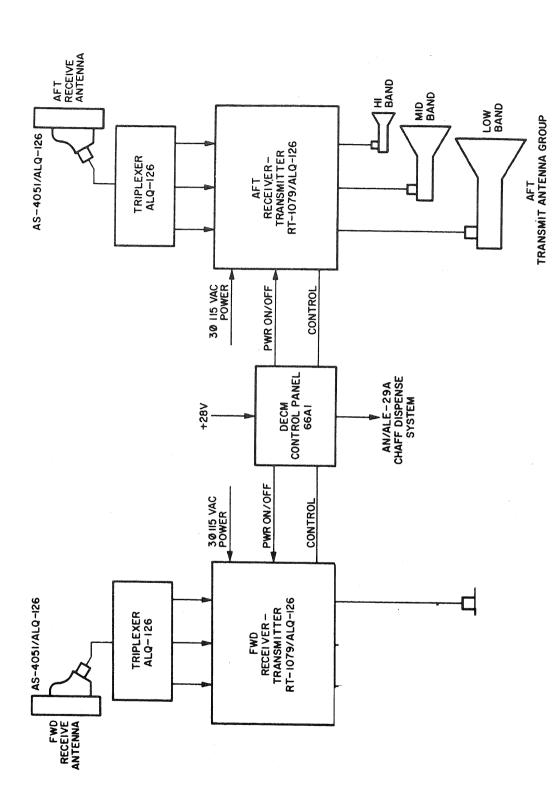
WS1-T-0032

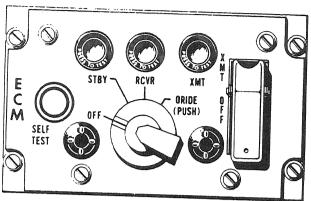




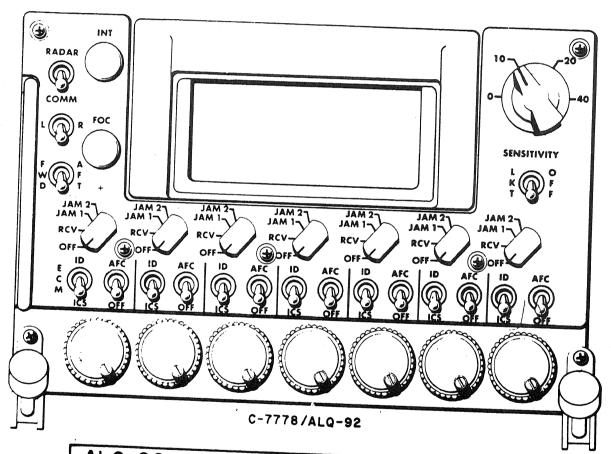






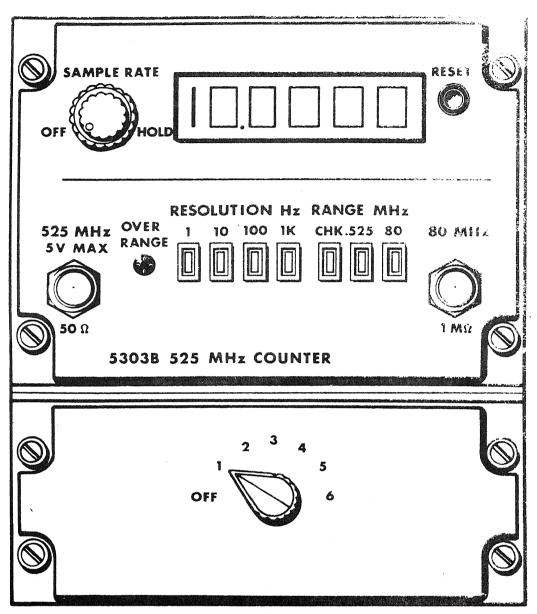


C-4379/ALQ-55



ALQ-92 DISPLAY AND CONTROL PANELS

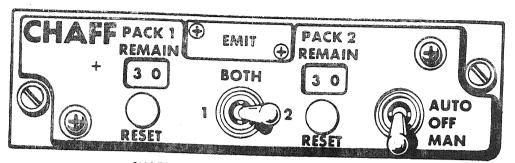
--- EA-6B --WSI-T-0036 I-CAP



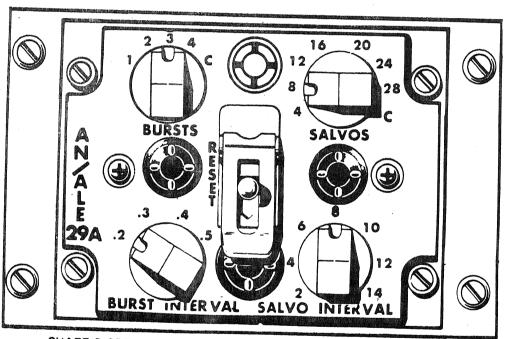
FREQUENCY COUNTER CONTROL UNIT

AN/ALQ-92 FREQUENCY COUNTER PANEL

-- EA-6B ---WSI-T-0037

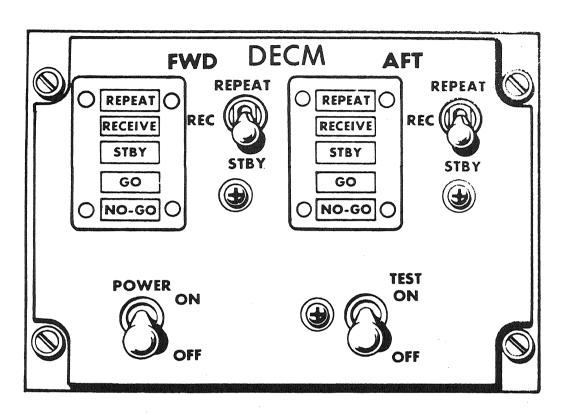


CHAFF CONTROL PANEL C-7813/ALE-29



CHAFF DISPENSER PROGRAMMER PANEL, MX-7718/ALE-29A

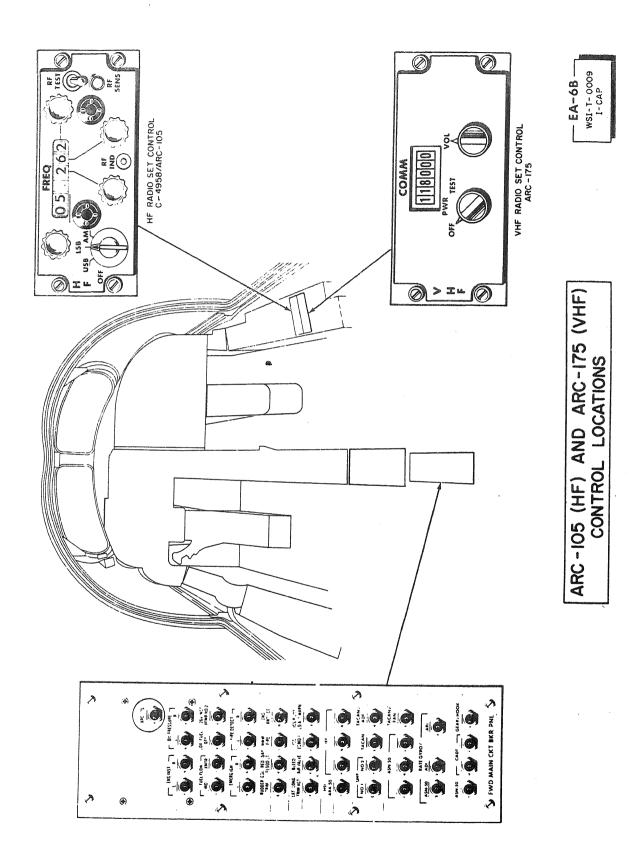
ALE-29A CONTROL PANELS

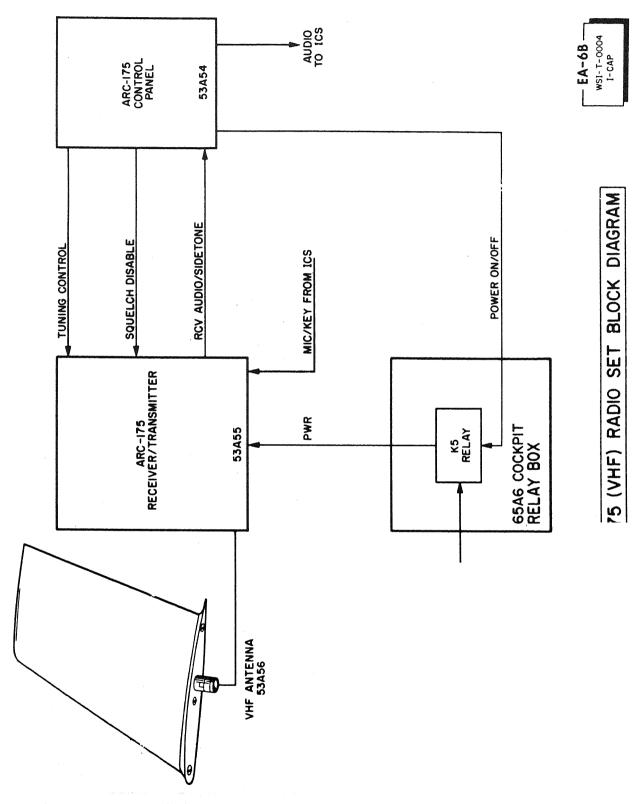


ALQ-126 SYSTEM CONTROL PANEL (CFE)

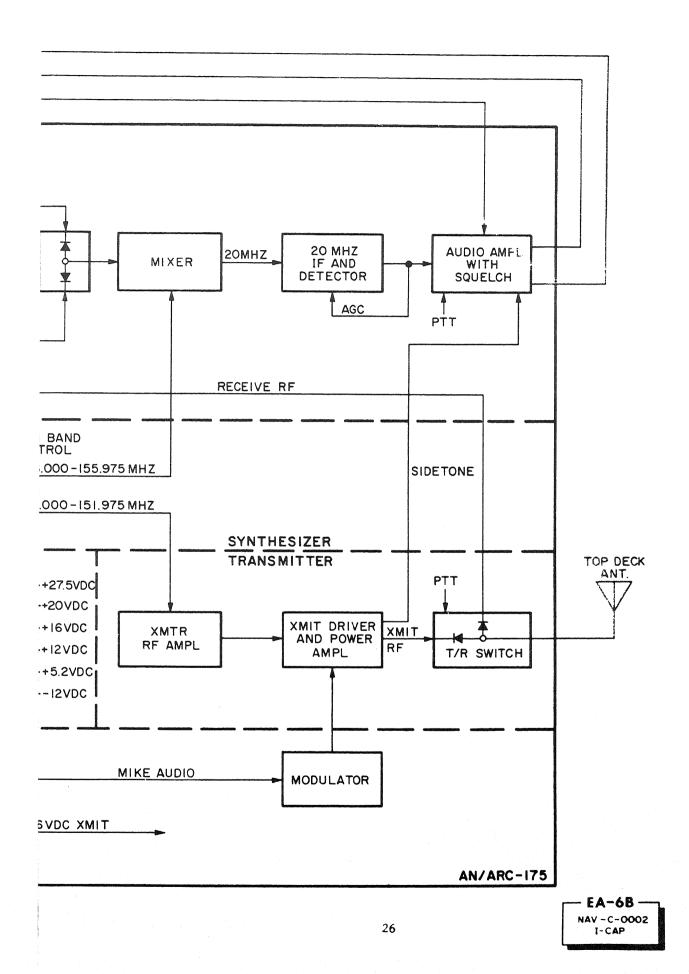
DECM CONTROL PANEL

WSI-T-0039

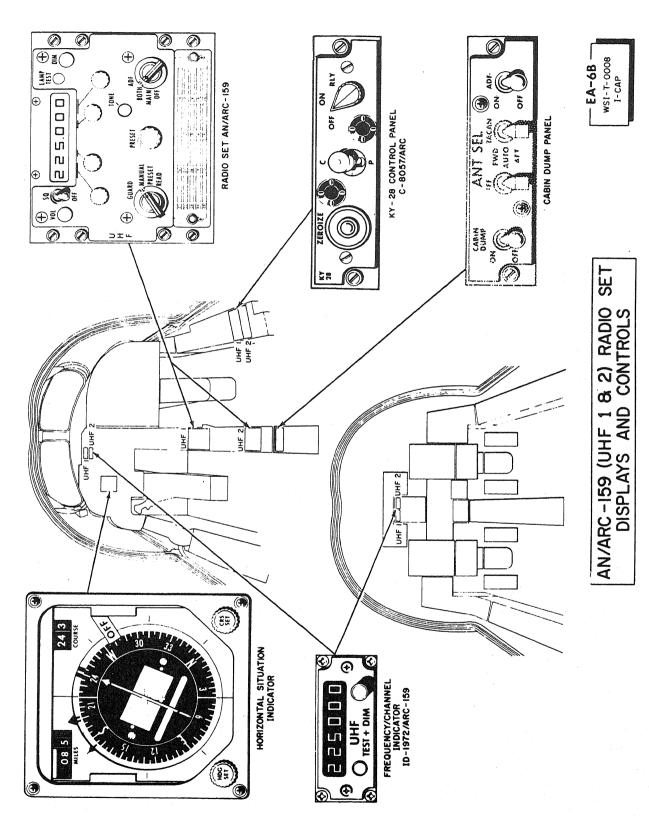


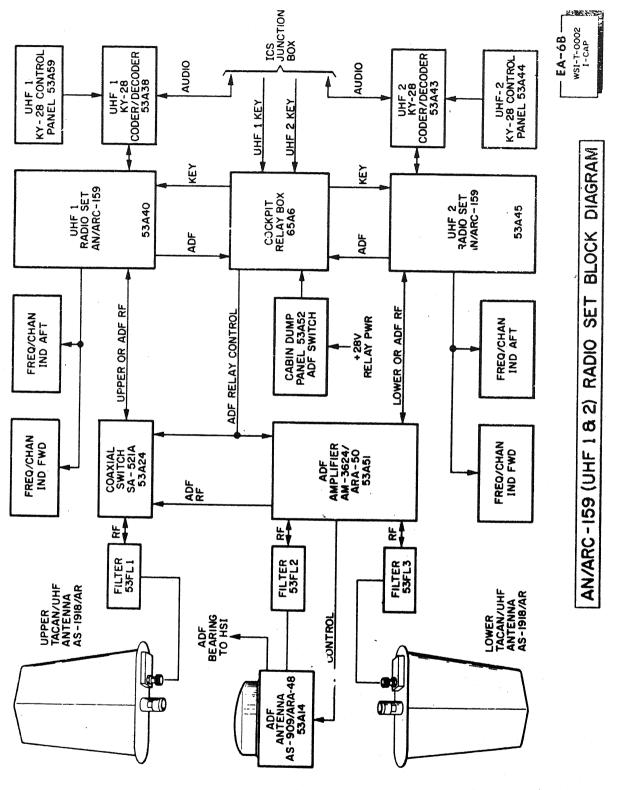


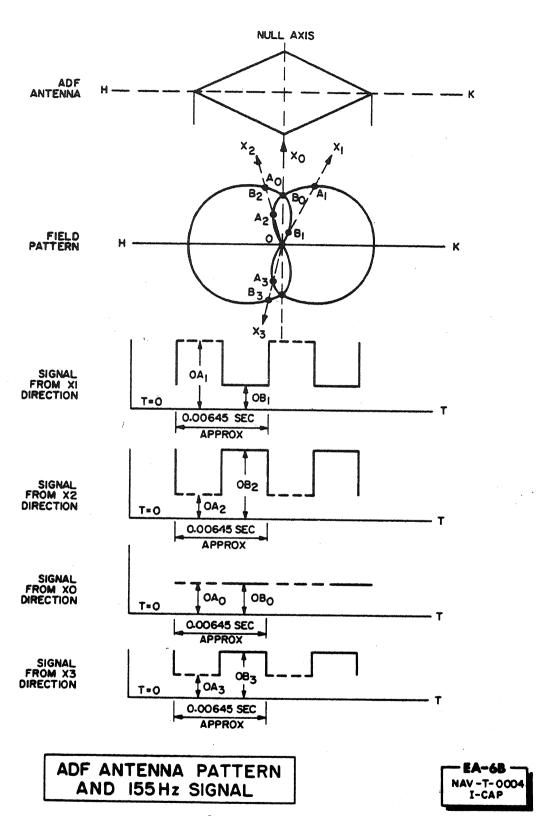


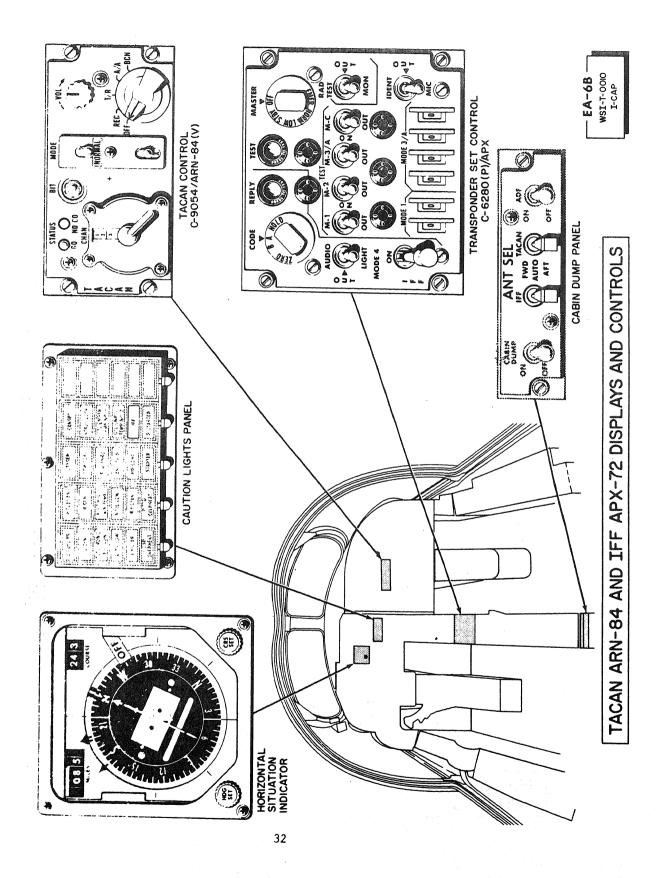


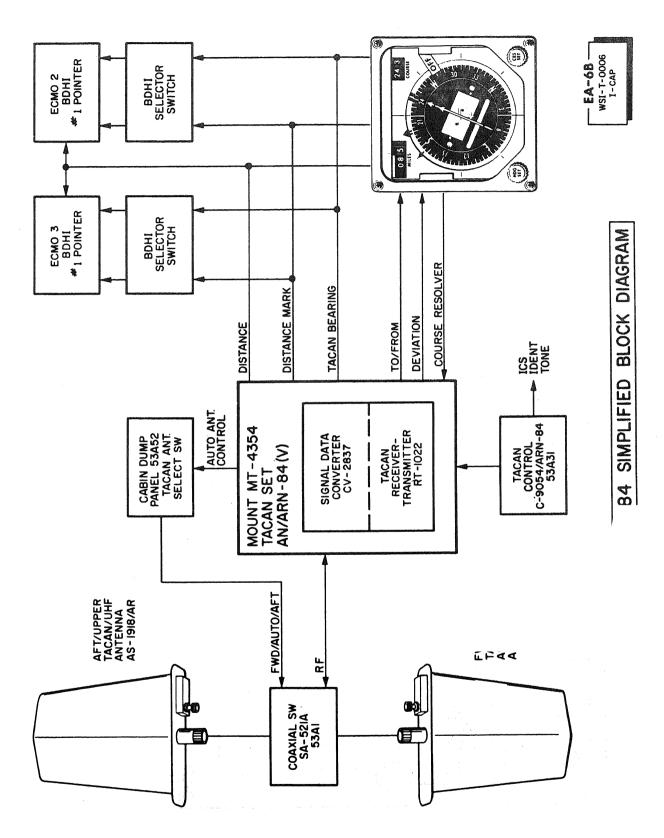


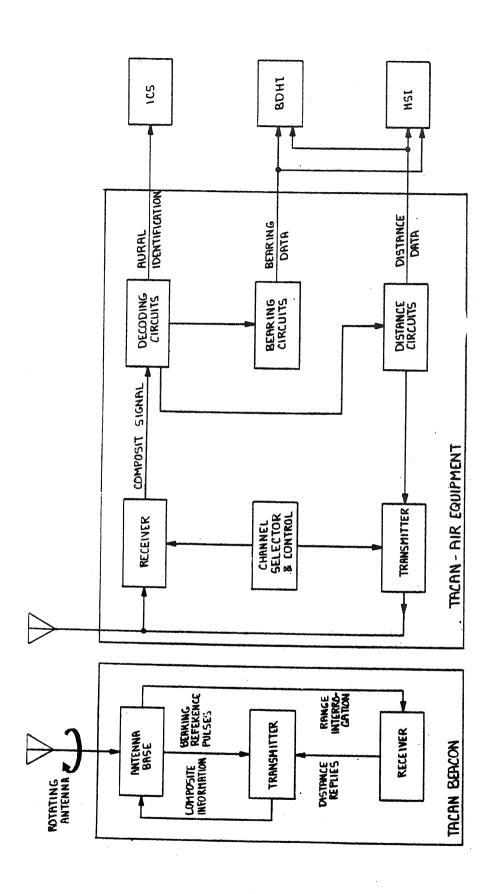






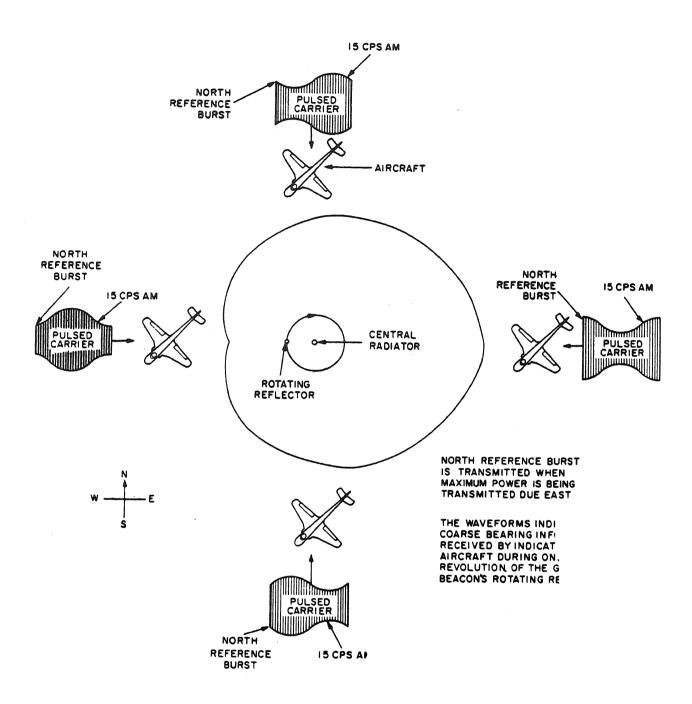




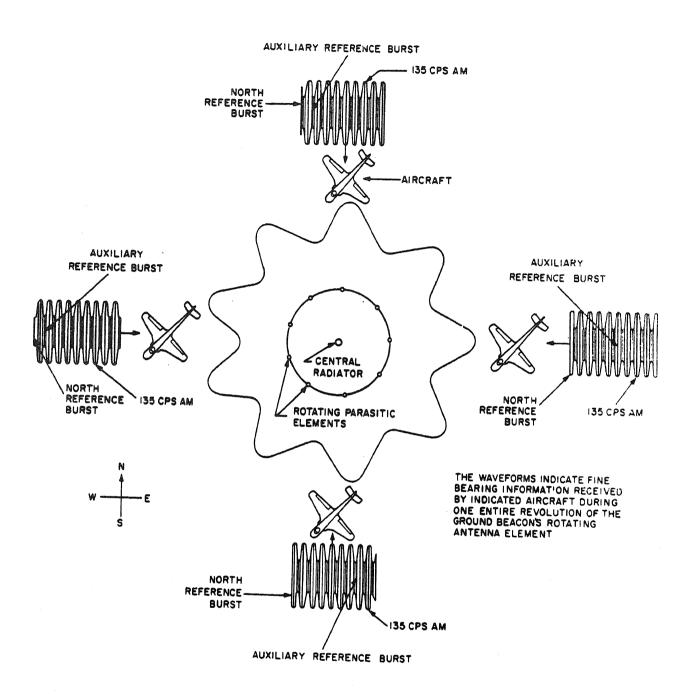




NAY-T-0005

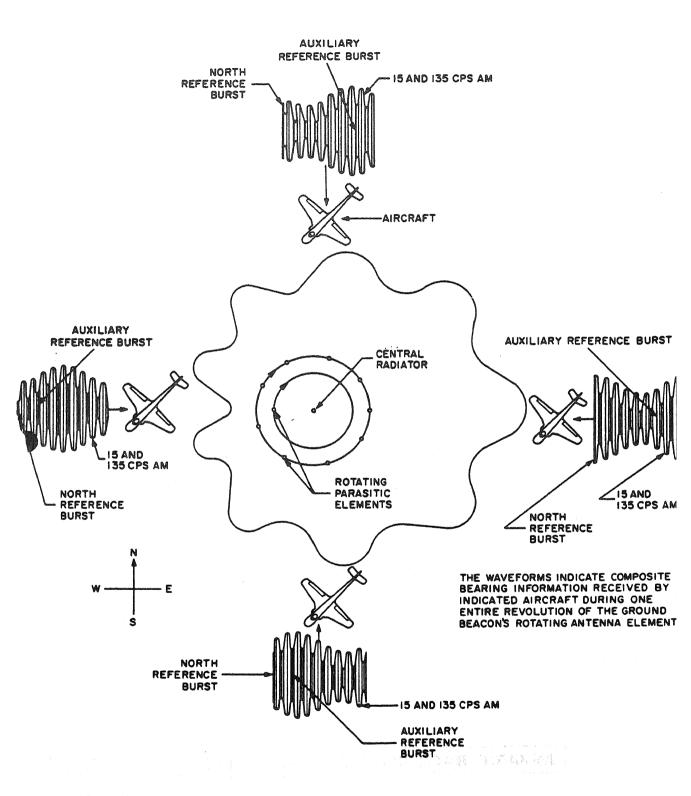


TACAN COARSE BEARING TRA



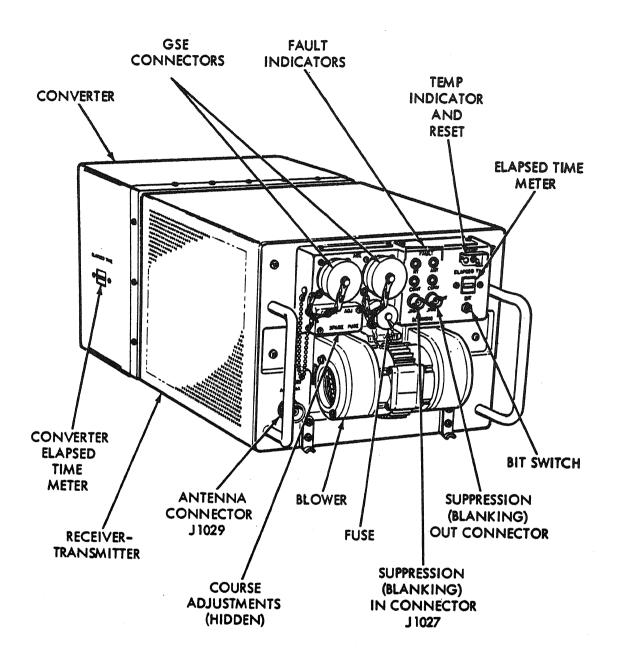
TACAN FINE BEARING TRANSMISSION-RECEPTION

--- EA-6B ---NAV-T-0007 I-CAP



TACAN COMPOSITE BEARING TRANSMISSION-RECEPTION

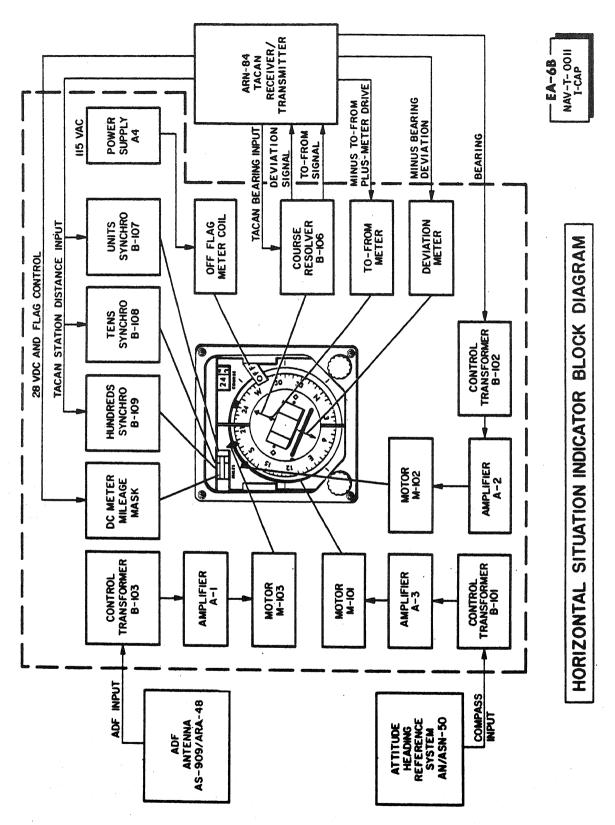
- EA-68 --NAV-T-0008 I-CAP

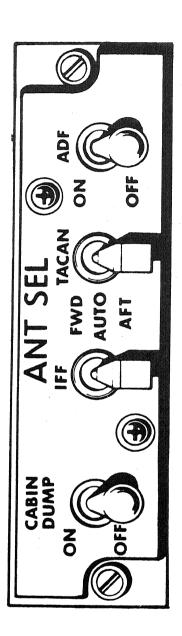


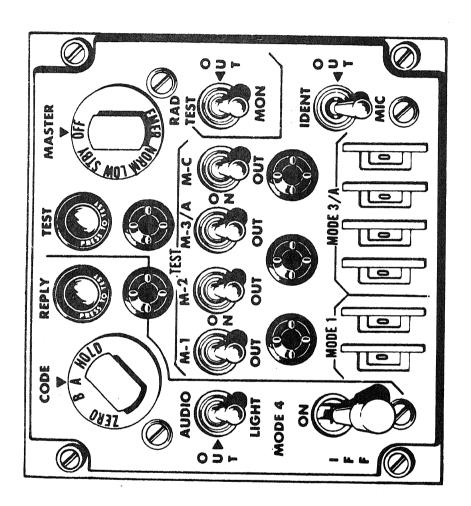
AN/ARN-84(V) CONVERTER / RECEIVER

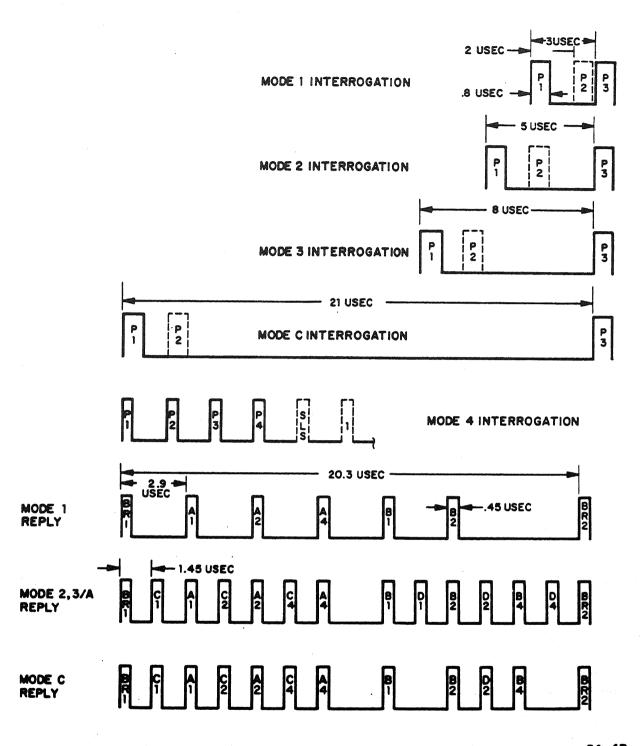
- EA-6B ---NAV-T-0009 1-CAP

AN/ARN-84 (V) TACAN CONTROL PANEL





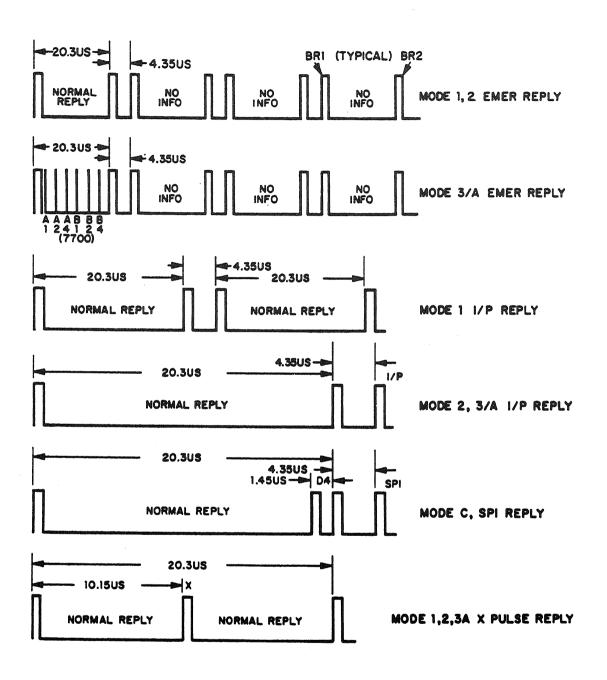




NORMAL IFF INTERROGATION AND REPLY PULSE TRAINS

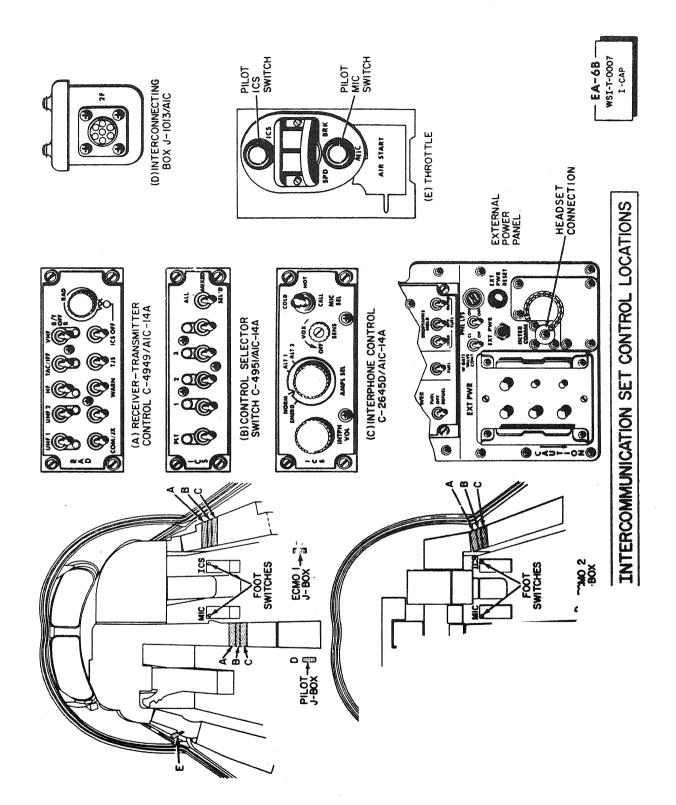
- EA-68 NAV-T-0012 I-CAP

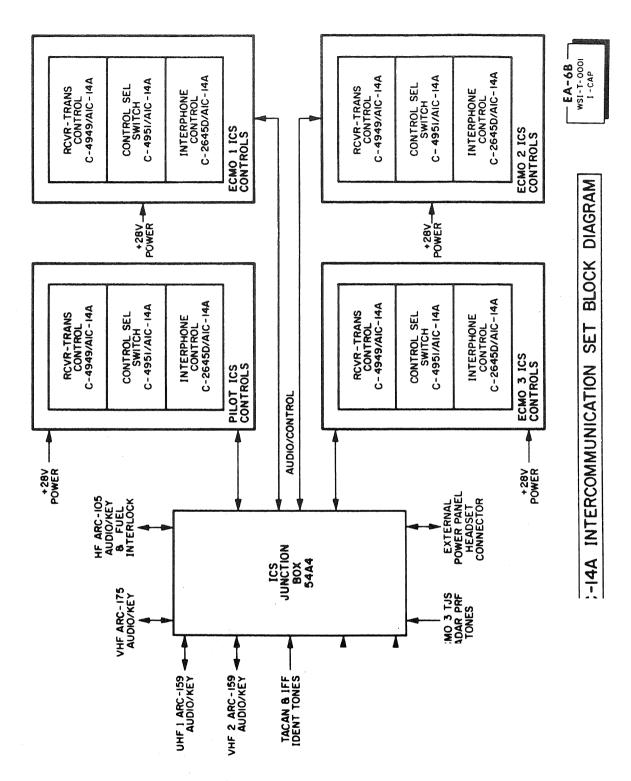
Lavorativ også i standivisier

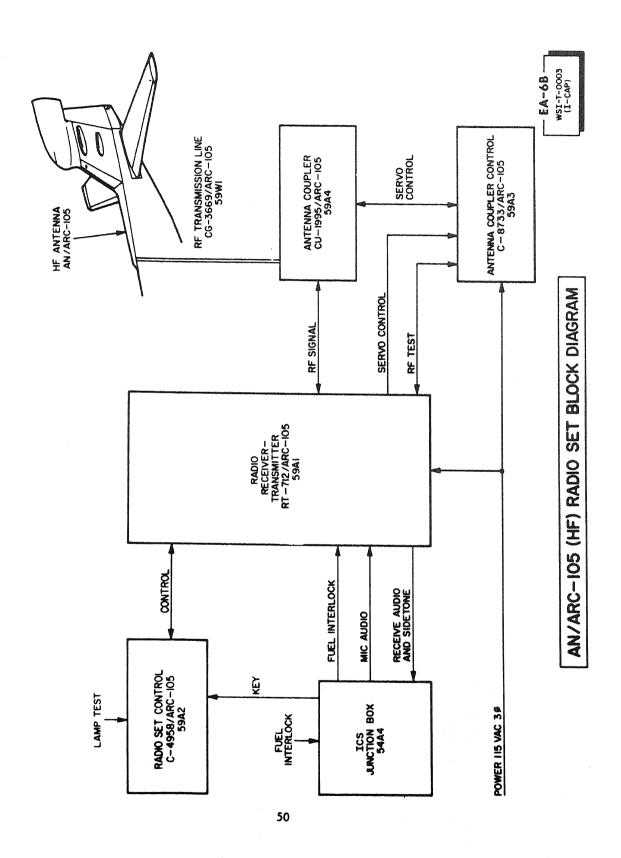


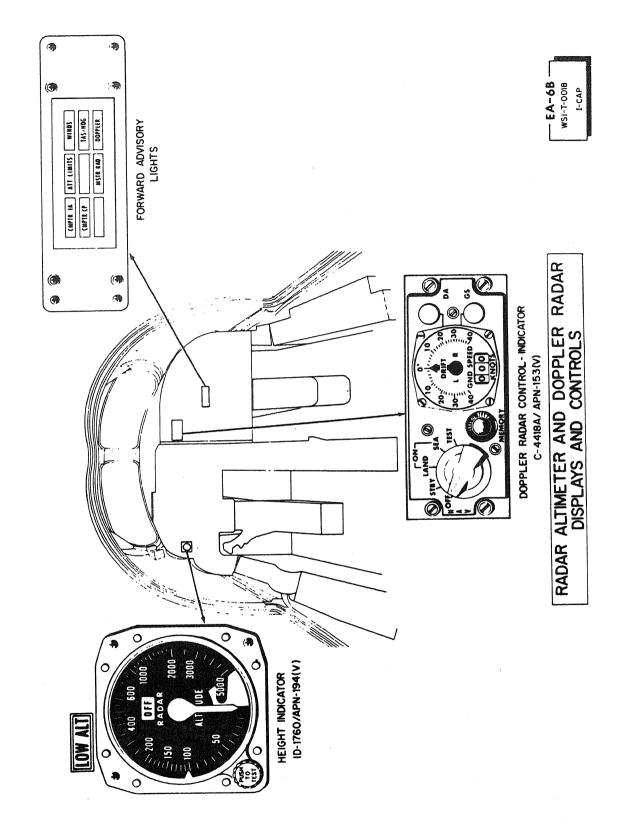
SPECIAL IFF REPLY CODES

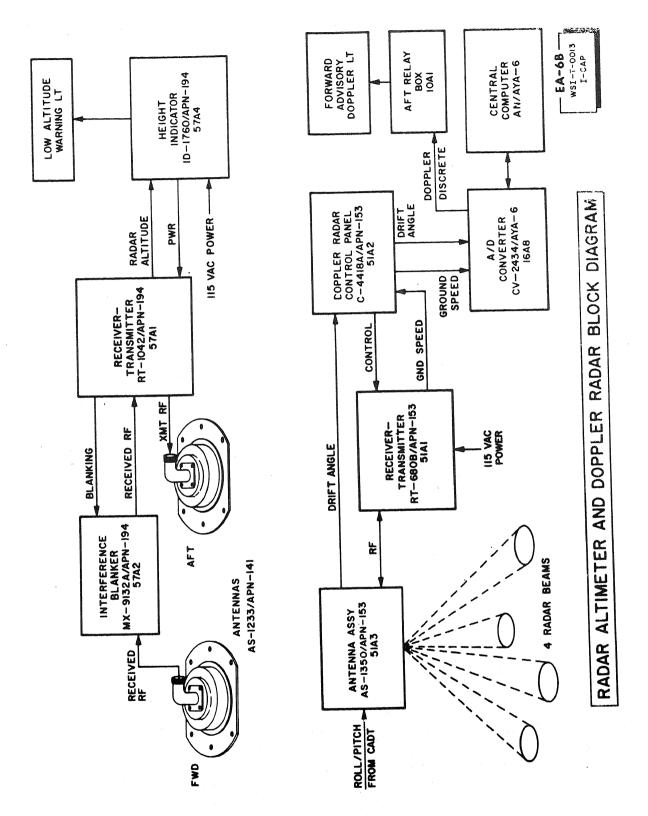
NAV-T-0013

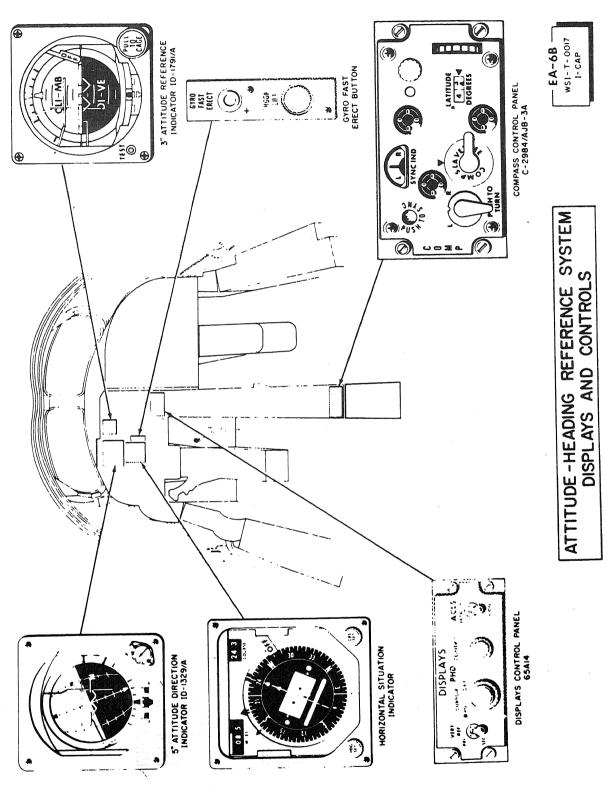


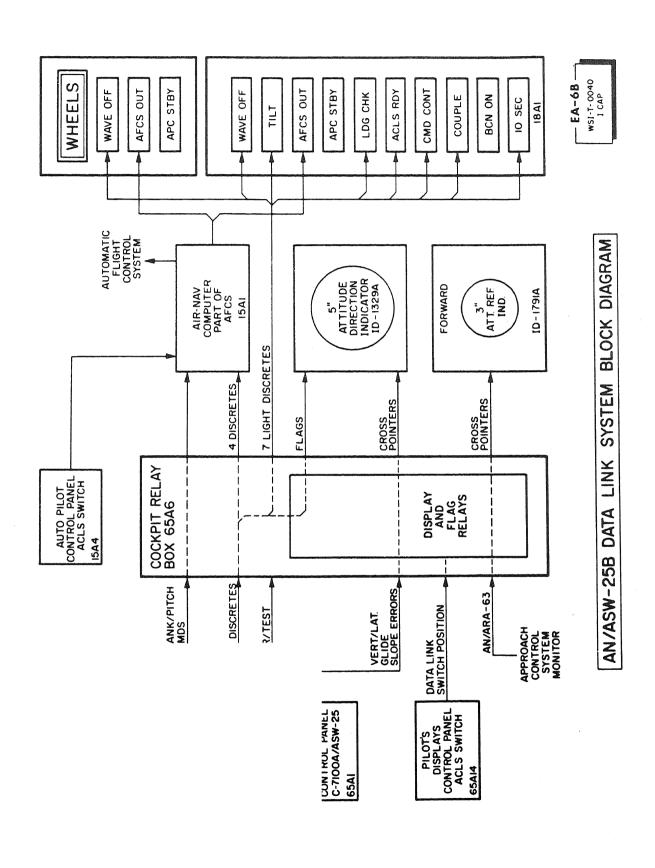


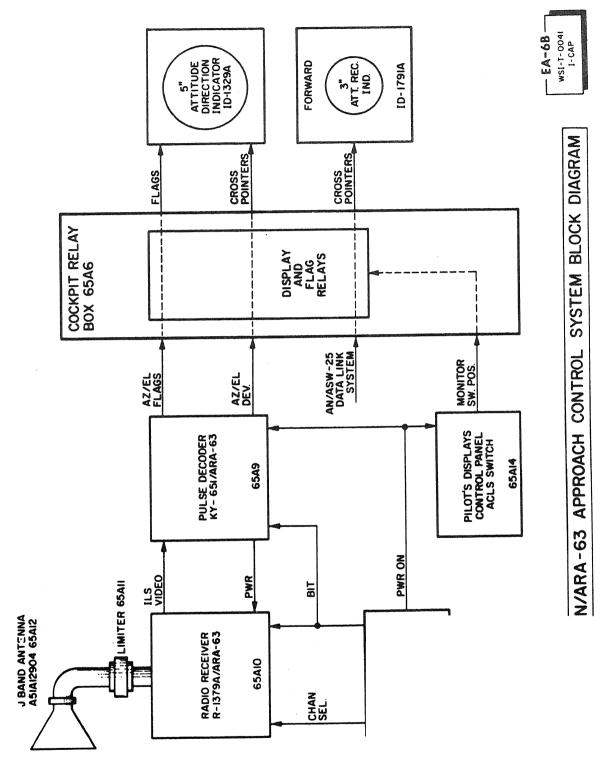


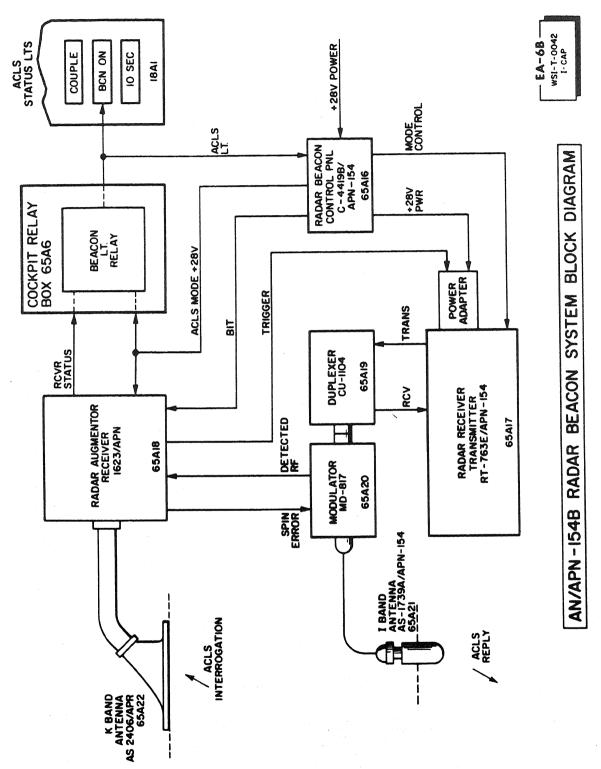


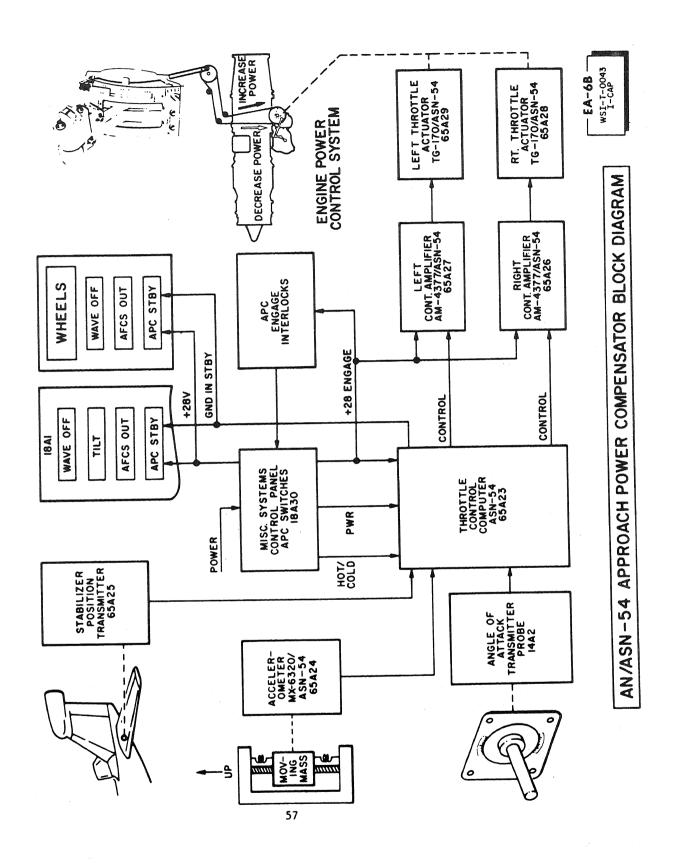


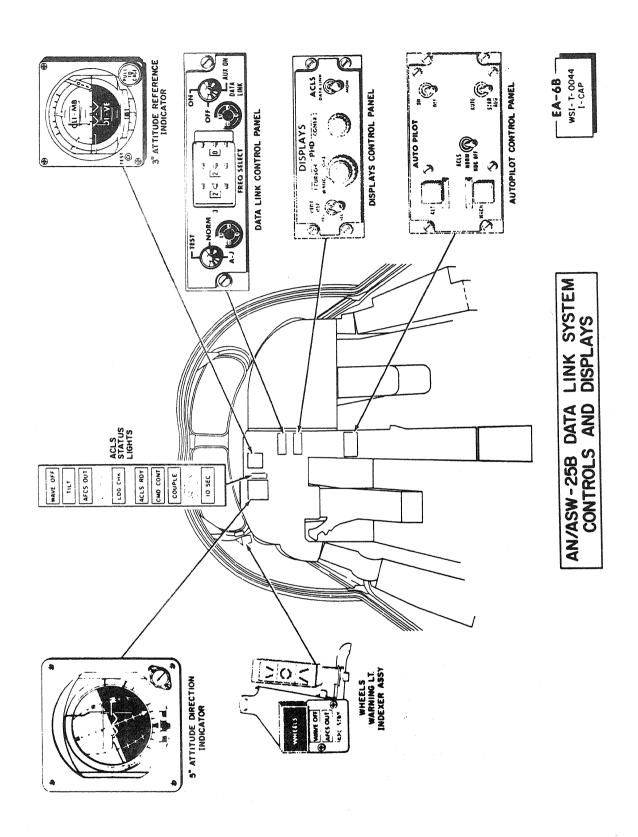




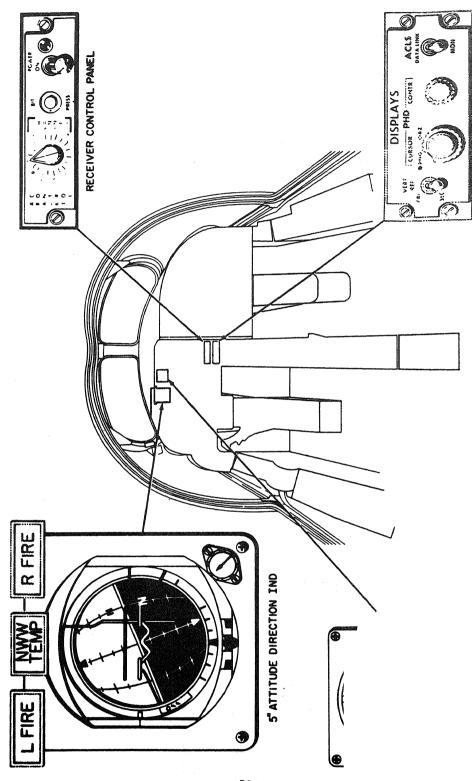


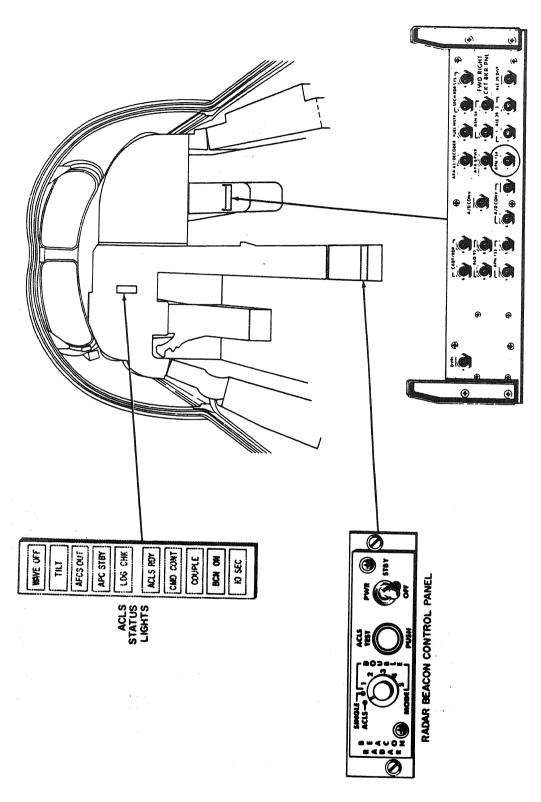






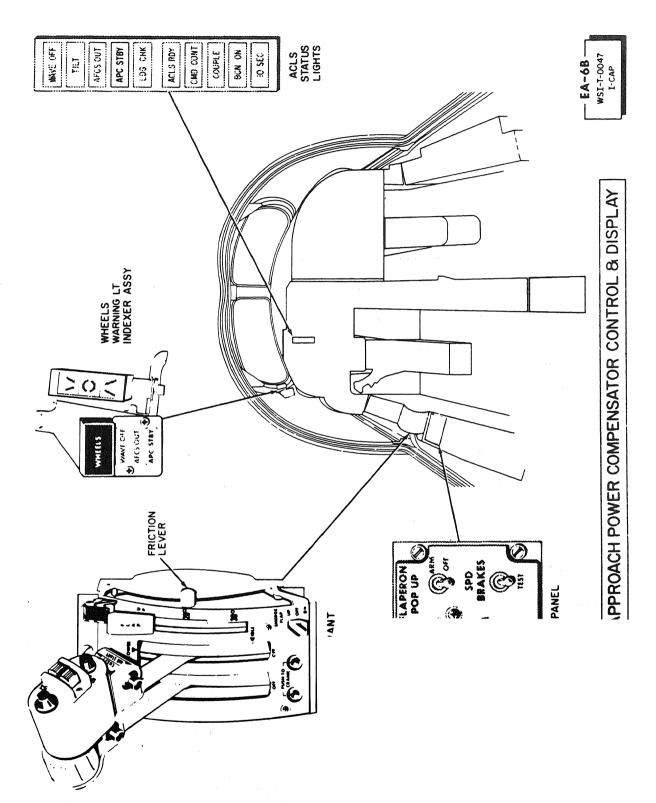
DISPLAYS CONTROL PANEL





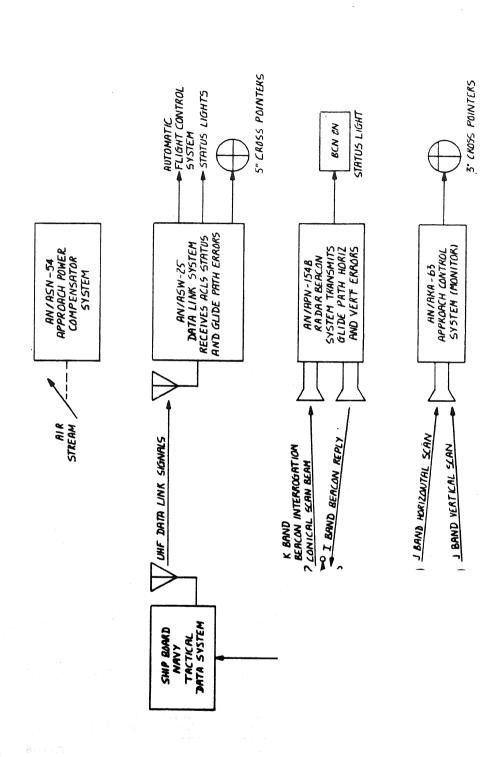
AN/APN-154B RADAR BEACON SYSTEM CONTROL AND DISPLAY

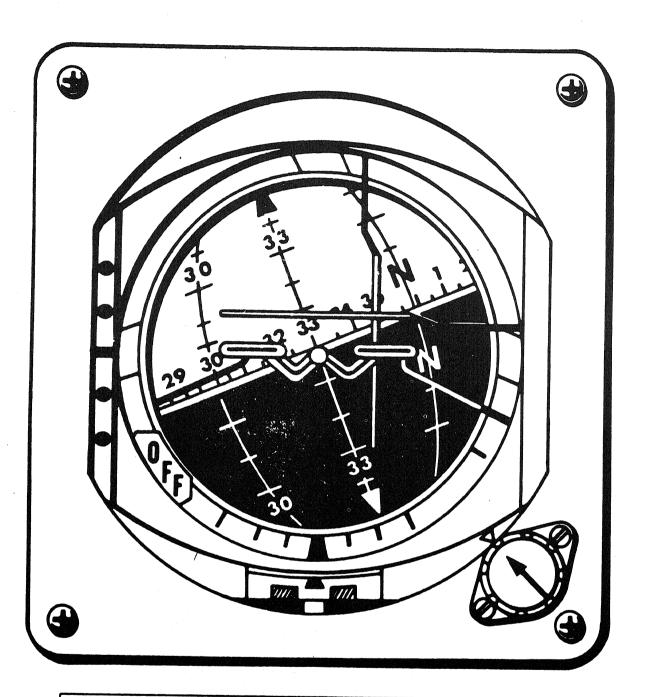
--- **EA-6B** ----WSI-I-0046 I-CAP





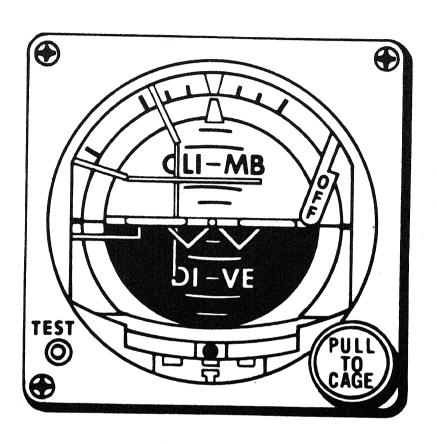
SIMPLIFIED ACLS BLOCK DIAGRAM





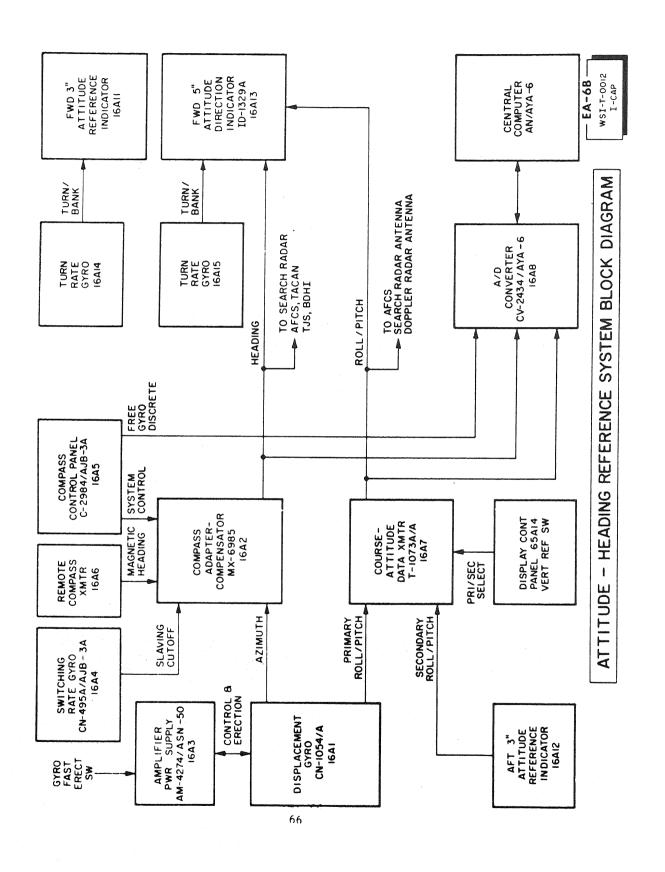
5"ATTITUDE DIRECTOR INDICATOR ID-1329A

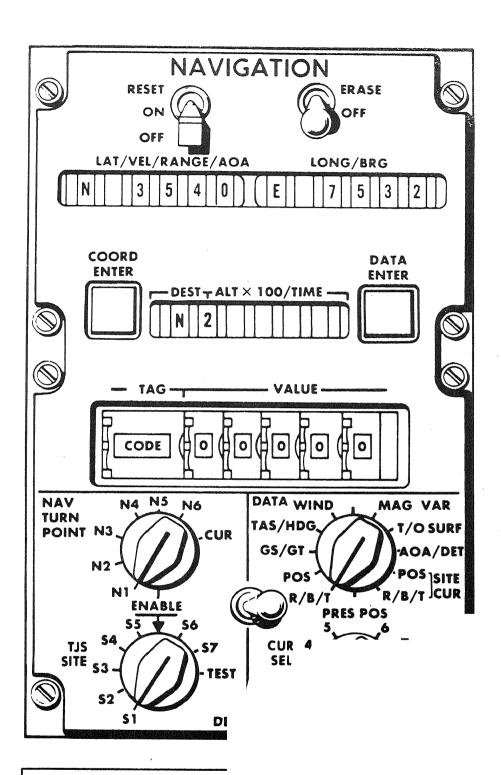
- **EA-6B** -



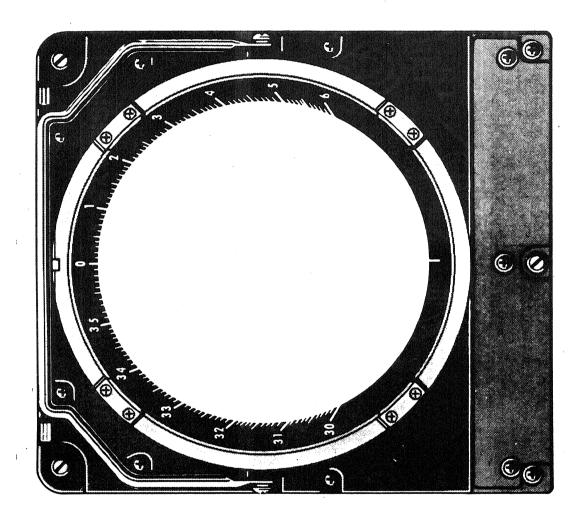
3"ATTITUDE DIRECTOR INDICATOR ID-1791A

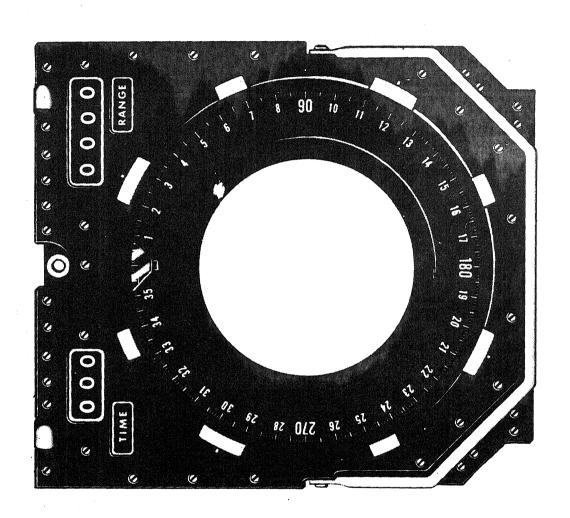
NAV-T-OOIS

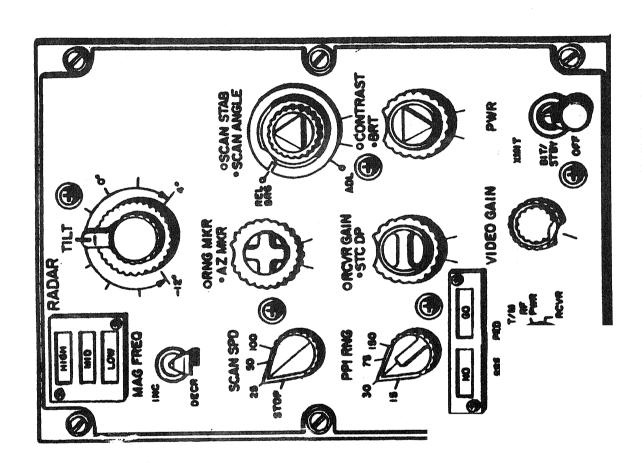


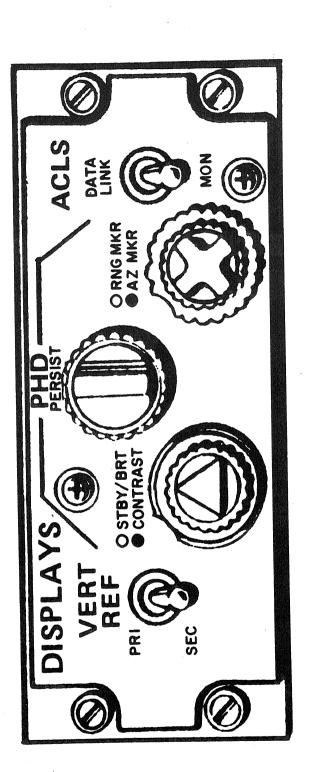


COMPUTER CONTROL INDI

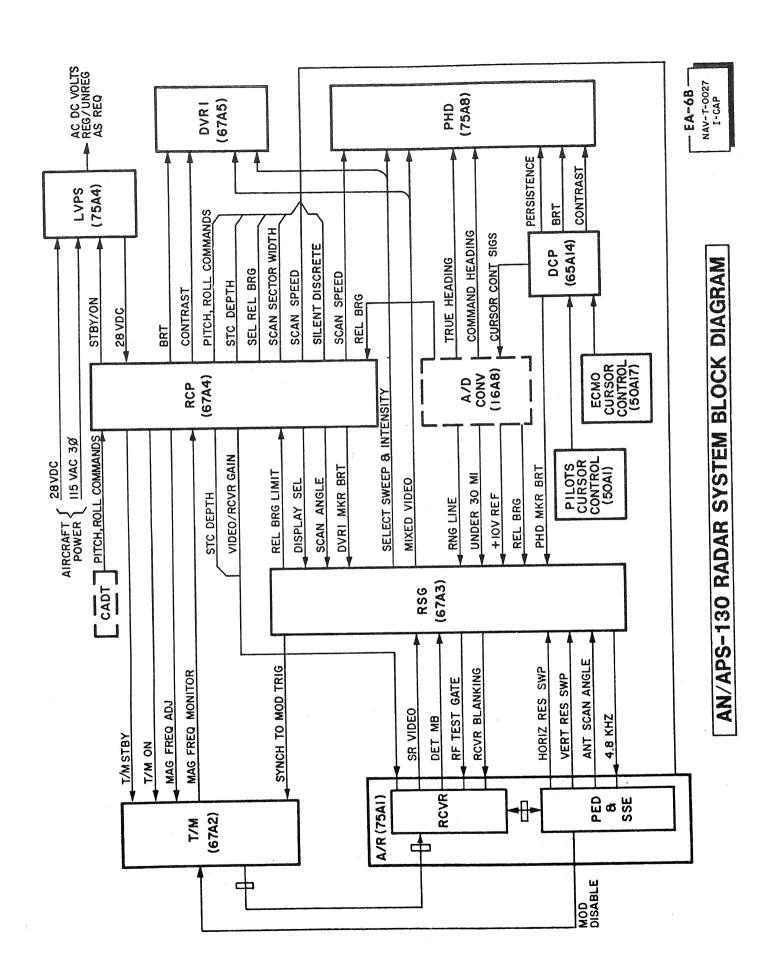


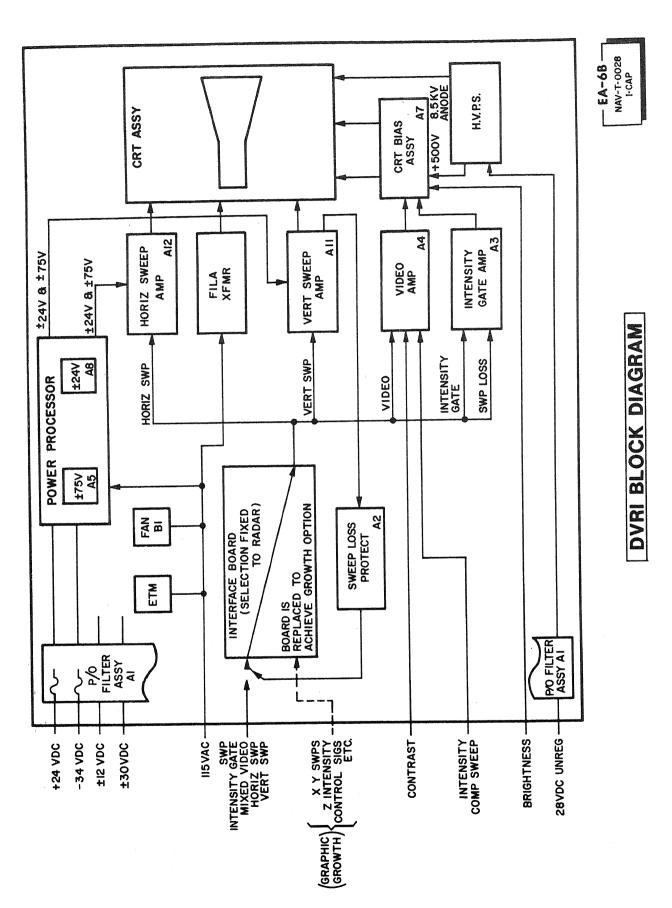


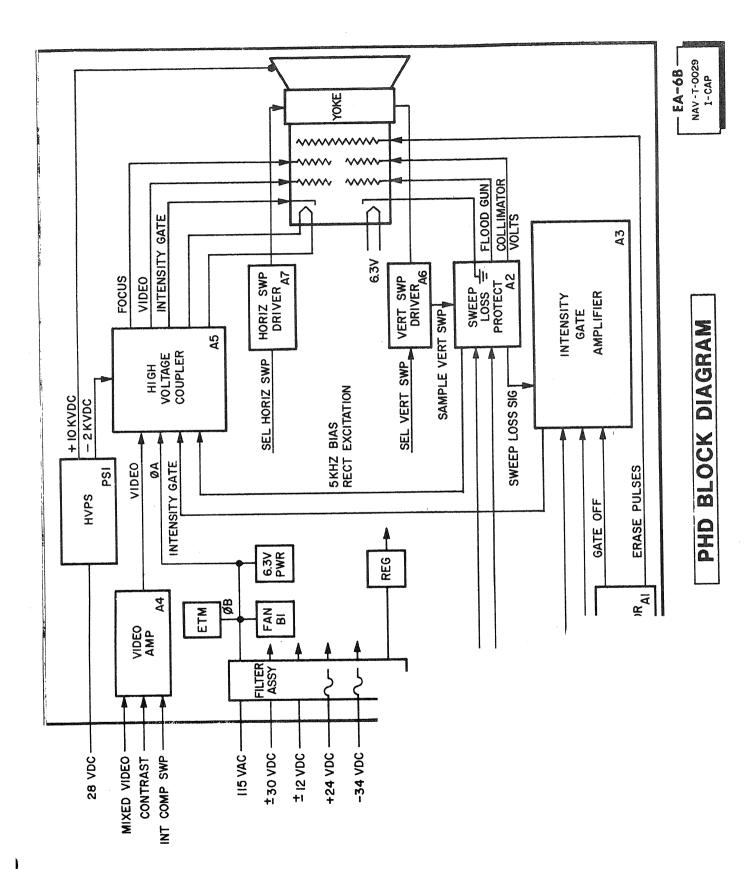


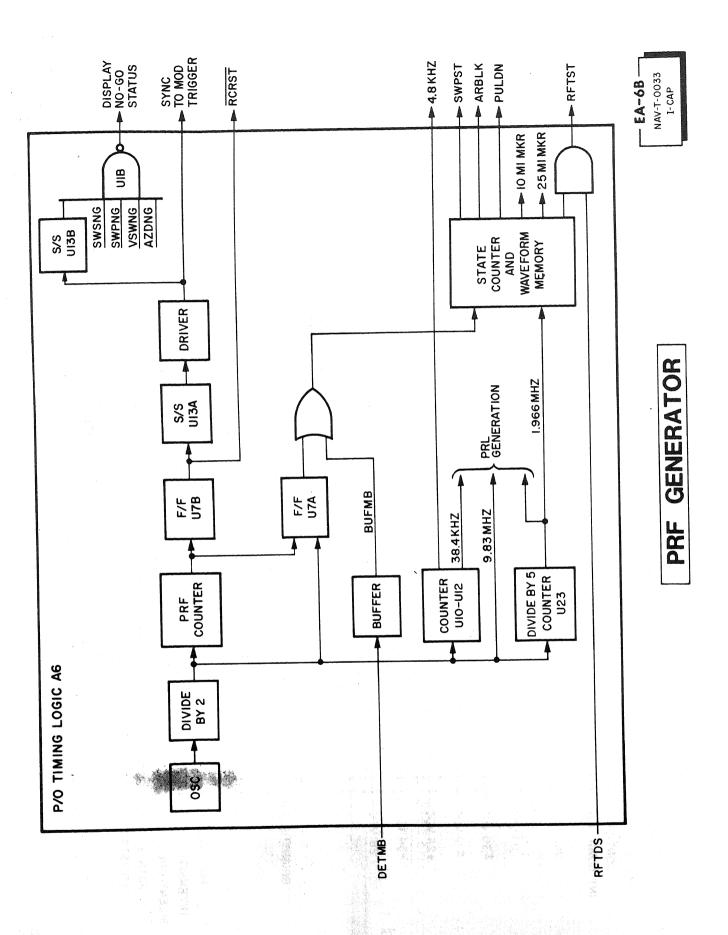


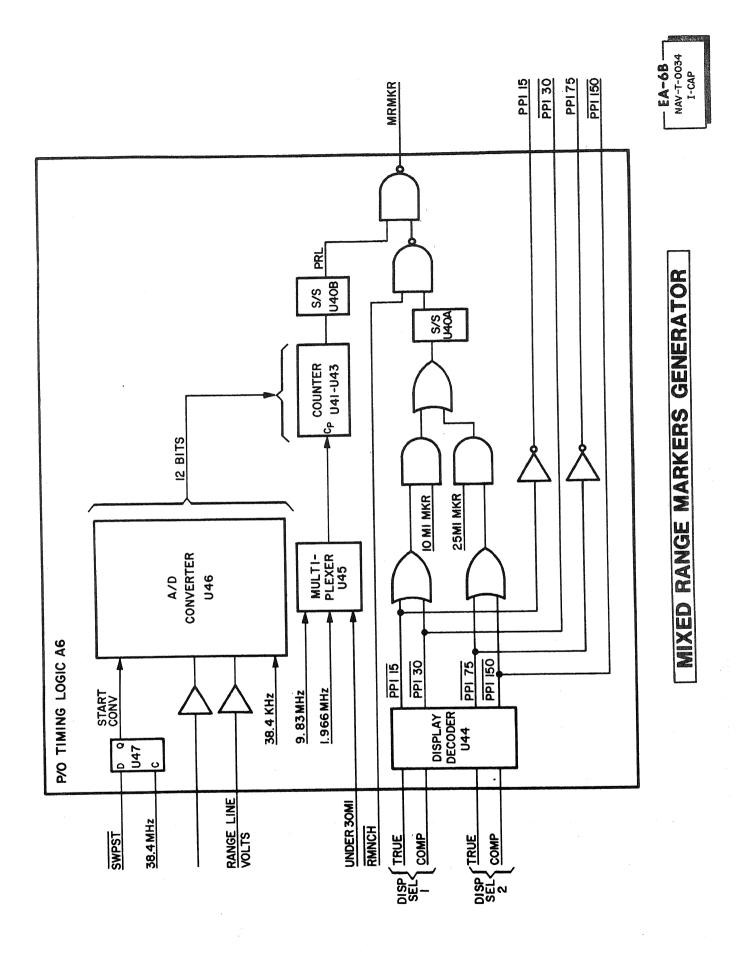
DISPLAYS CONTROL PANEL

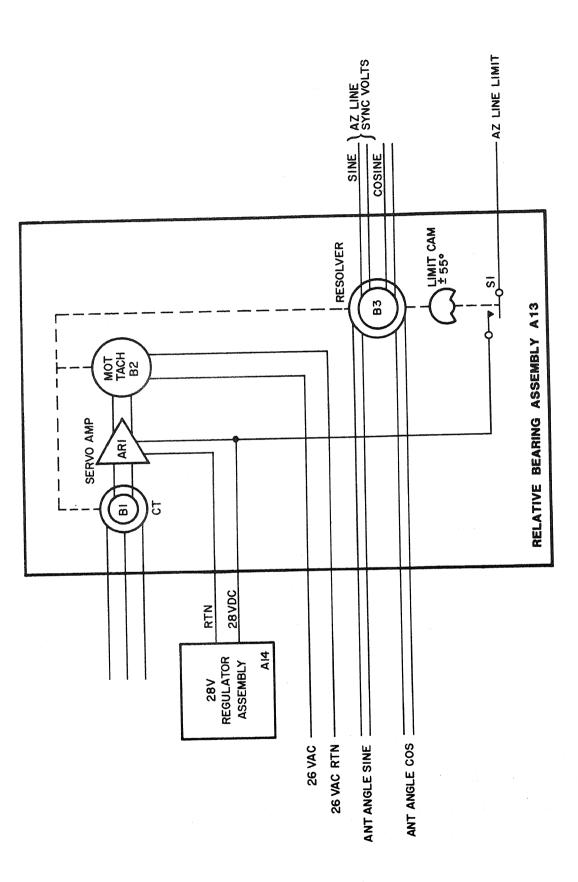












RSG RELATIVE BEARING SERVO

— **EA-6B** — NAV-T-0035

